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The Beattie-Smith Lectures.¹

(UNIVERSITY OF MELBOURNE.)

PSYCHIATRY: PAST, PRESENT AND FUTURE.

By W. ERNEST JONES, C.M.G.,
Melbourne.

LECTURE I: A RETROSPECT.

I DESIRE to express my thanks to the Council of the University of Melbourne for the honour conferred on me in appointing me to deliver the Beattie-Smith Lectures for 1938. Freedom from official responsibilities will enable me to speak unreservedly

of some of the many psychiatric problems and administrative difficulties confronting me during the thirty-two years that I was a servant of the public in Victoria; but I propose also to inflict on you reminiscences covering half a century of work in various institutions for the treatment of mental disorders in England and Wales, as well as in Australia.

Before doing so, I feel that I must take this opportunity to refer to the founder of these lectures, as probably there are very few here today who have any personal recollection of William Beattie-Smith.

A North Country man, a Fellow of the Royal College of Surgeons of Edinburgh, a student of mental disorders under that wonderful teacher, Clouston of Morningside, he came out to this country in 1882, and was appointed medical officer to the Ararat Asylum. Shortly after that he was transferred to Yarra Bend; he was further promoted in 1883, and five years later he returned to Ararat as

¹ Delivered at Melbourne on November 24 and December 1, 1938.

medical superintendent of its asylum. During the eleven years he held this post, that institution could be accounted as his own particular hobby. Amongst other innovations, he established an excellent vineyard and cellar, and produced, amongst others, a wine that he designated "Golden Chasselas". He took a very prominent part in inaugurating the systematic training of the nursing and attendant staff along the lines laid down by the Medico-Psychological Association of Great Britain and Ireland; and after a visit to the Old Country, he inaugurated (with, however, comparatively little success) a boarding-out system in imitation of that in vogue in Scotland. He was, in 1899, appointed medical superintendent at Kew, and there he took up with enthusiasm the work of delivering lectures on insanity to the medical students of this university. He was unquestionably a man with a fine sense of honour, particular in his relationships, and a conscientious disciplinarian.

It was these traits that led to his resignation from the Department of Lunacy at a time when he was Acting Inspector of Asylums, and he found himself at loggerheads with the powers of the day. A definite recommendation, and, as it subsequently proved to be, a wholly justifiable one, was not accepted by the Chief Secretary. Accordingly he submitted his resignation, and entered upon his career as a consultant in mental disorders, and for some years his advice was widely sought in these matters. I can say for myself that I received from Beattie-Smith much help and sound counsel when I took up the work which, in all probability, would have been his but for the fact of his resignation at a time when his experience and integrity would have been of the greatest value to the Department of Lunacy.

The way in which I can best serve the purposes for which these lectures were established is to attempt a survey of the progress of psychological medicine during the fifty years of my own personal experience. I hope that I shall not be considered unduly reminiscent or devoted to the "good old days" if I appear to make prominent what was best in them, to the exclusion of their less desirable features. I trust that I shall be able to disarm present criticism if I say at this early stage that the last thirty-five years have seen greater advances in the treatment of the mentally disordered than any other period since the days when Pinel, Tuke, Connolly and other reformers began their humane work of striking off fetters and opening cell doors, letting light into this dark and unhappy phase of human existence.

In England, at a time when asylums were being freely erected, lunacy legislation was being coordinated and regulated by Acts of Parliament somewhere about 1858, and sponsored by that great philanthropist the Earl of Shaftesbury. The procedure we know as certification was evolved; it preserved the ideals of the liberty of the subject, as well as affording protection for the lunatic person. The county magistracy provided the local

control of the asylums; but there was also created the office of the Lunacy Commission, which consisted of a chairman, often a prominent politician, with three medical practitioners and three legal gentlemen. Their duties consisted of the inspection of all such institutions, whether public or private, and of the reporting on them to Parliament through the Home Secretary. The Lord Chancellor's visitors, medical and legal also, had duties and functions in the case of Chancery patients, many of whom were in private asylums, or, as they were termed, "licensed houses".

An amending Act was passed in 1889, and in the next year the principal Act was passed and brought into force. This was the time of my introduction into this branch of medicine, so that I think I may claim to speak with some degree of confidence as to the progress that has been made from that time. Under the new Act, the local administration of asylums passed into the hands of the county and borough councils; but the inspection and critical control by the Lunacy Commissioners was retained. Private licensed houses were continued, but their numbers were restricted and no further licences were to be issued. The process of certification by two medical practitioners, endorsed by an order for committal by a Justice of the Peace, was necessary for the admission of a patient; but to prevent unnecessary delays, urgency orders lasting for a week permitted a reception on one medical certificate only, full certification being necessary before the end of that time. In certain institutions, private asylums and the so-called lunatic hospitals, of which Bethlehem, Saint Andrew's and Saint Luke's were good examples, voluntary boarders were permitted; but this was not the case with county and borough asylums. These latter were financed and managed by committees from the councils; but the immediate direction was in the hands of a medical superintendent, who had the assistance of a varying number of medical officers, a secretary or chief steward, and other minor officials, such as chief nurse or matron, head attendants *et cetera*. The real responsibility, however, belonged to the medical superintendents, almost invariably good managers, but not necessarily distinguished for scientific research. There were, of course, notable exceptions to this, for example, Bevan Lewis at Wakefield.

The County Council of London commenced its duties by erecting several new asylums, of which Claybury was, I think, the first and best-known example. It was built on the design of George Hine, who was responsible for several other new asylums and later became the consulting architect to the Lunacy Commissioners.

So far as English psychiatry is concerned, the establishment by the London County Council of a Department of Pathology in 1895, under the direction of Frederick Mott, was a most important advance. Mott's name will stand for ever in the forefront of the all-too-small body of British scientists engaged in research into the causes and treatment of insanity. One can hardly give too much

credit to the men responsible for the planning and equipment of these model hospitals; for hospitals they were rapidly becoming, with a comprehensive classification into suitable wards—wards varying with the requirements of the patients. Reception wards for recently admitted patients, hospital wards for the sick, infirmary wards for the aged and feeble, enclosed wards for the turbulent and refractory, workers' blocks, special wards permitting continuous observation of epileptic and suicidal patients—each was designed with special features for the varying classes of patients they accommodated. Electric lighting, telephone, tell-tale and fire-alarm systems, various methods of providing central heating, and excellent sanitary blocks, were essential features; kitchens and laundries with labour-saving devices of all kinds were a *sine qua non*. Besides, one can speak with admiration of the recreation halls, the separate chapels, visiting rooms and workshops. It became the custom to erect separate blocks for the nursing staff, and cottages for male attendants and other employees on the reserve, and increasing attention was paid to the needs of the staff generally. It was very necessary; for at the time of which I am writing, the commencing salary of an attendant was rarely more than £32 *per annum*, and for the nurses, £18 to £20—with full board, lodging and uniform, however. The hours of duty were long, totalling about 72 per week, and mitigated only by an annual holiday of not more than two weeks. You may wonder how the staff could be recruited and maintained in the circumstances; but I can testify to the character of the men and women who took up this work. They were, with very rare exceptions, kindly and patient, with a genuine consideration for their charges, and intuitive, even if not highly trained.

I think one might describe the discipline and mode of life in such asylums as being almost monastic; one left when going off duty through the gate-keeper's lodge, and one's goings and comings were duly recorded in the daily register. There were but few chances of matrimony for any medical officer until he had reached the exalted position of a medical superintendent. In spite of these restrictions, possibly because of them, greater interest was taken by the general body of the staff in the patients themselves; and their entertainments and recreations, such as dances, concerts, cricket matches *et cetera*, were much more numerous and enthusiastically carried out than is the case today in this country. The chief means of entertaining our patients today consists of the cinema and wireless sets, which entail comparatively little individual effort on the part of the staff.

At this time, too, nursing examinations were established by the Medico-Psychological Association, and almost every institution started courses of lectures in first aid, elementary anatomy and physiology, and general and mental nursing. Promotion and a few additional pounds a year to the very inadequate salaries went to the successful candidates.

About this period (and, of course, I am speaking of the delightful nineties, when England was at its very best and happiest), increasing interest was taken in the matter of research in asylum laboratories and in better teaching in psychological medicine, although as yet no such thing as a diploma had been evolved. The Medico-Psychological Association had established a certificate as far back as 1885; but the General Medical Council of Great Britain and Ireland decided that compulsory study in mental disorders was necessary. This was only in 1893, three years after Clouston, at Edinburgh, had succeeded in establishing a course of fifteen lectures or a clinical appointment of at least six weeks' duration, which was to be taken before the final examination for the degree of bachelor of medicine of Edinburgh University. However, 1911 saw diplomas in psychological medicine established at Edinburgh, Durham and Manchester, and later at London and Cambridge.

I have, however, run somewhat ahead of my subject; and I should return once more to the nineties, which, in 1897, saw the establishment of the Claybury laboratory under Frederick Mott, and the Scottish Asylums laboratory in Edinburgh, with Ford Robertson at its head. Appointments of pathologists to various large asylums, chiefly in the north of England, were being made (for example, at Wakefield, Prestwich, Rainhill *et cetera*), wherein skilled investigators like Campbell, Rows, Orr, Goodall and Watson were at work. Campbell's work on cerebral localization, Shaw Bolton's generalizations into the amentias, take second place only when contrasted with the importance of Mott's work at Claybury. It was from Mott that we in English asylums learned that general paralysis of the insane must mean syphilis, either inherited or acquired; that alcohol produced symptoms and effects in those of sound mentality different from those produced in individuals predisposed to nervous and mental disorders; and that in inherited psychoses there was an antedating of symptoms from one generation to another. Possibly I have not made this clear, so perhaps I should amplify this statement by explaining that Mott's carefully gathered statistics show that a manic-depressive parent is prone to produce a descendant who will eventually develop *dementia præcox*. Mott's works on colitis (asylum dysentery), and later still on shell shock, were marked by the same clarity of thought and insight that characterized all his contributions to our knowledge.

The end of the nineteenth century was clouded by the Boer War, and a few years later a considerable increase in the number of patients with general paralysis admitted annually to the British asylums was noticeable. This was the case also in our Victorian institutions, a fact that I propose to refer to later, under the heading of causation. Then, in 1904, the Royal Commission on Mental Deficiency commenced its long and arduous labours. Its first report was issued in 1908, and revealed the extent of this canker in our national efficiency and how

the unfit were propagating and filling asylums and other poor-law institutions with imbeciles of various grades, incurable and rarely employable, a menace to the eugenic condition of the nation. It was proposed that institutions of an inexpensive form and colonies should be established with a view to the more fitting training and utilization of the lower capabilities that these defective persons possessed; some degree of relief would thus be given to overcrowded asylums that were beginning to realize hospital ideas and were concentrating on the better treatment of recent and possibly curable patients. Many new institutions were being erected at this time, and there were great hopes of an increasing progress in psychiatry; and I am proud to say that I was given an opportunity to take a part, although a small one, in this advance.

The old Three Counties Asylum at Abergavenny (Monmouthshire), owing to overcrowding, terminated its partnership with the Counties of Brecon and Radnor. A new institution was established at Talgarth, in Brecon, a delightful spot at the foot of the northern slopes of the Black Mountains, with the beautiful valleys of the Wye and the Usk in the immediate vicinity. I had the good fortune to be appointed in 1901 as the first medical superintendent, and it fell to my lot to furnish, equip and staff this new hospital. It was designed on what were then quite modern lines for 360 patients, with planned additional accommodation for 120 more. The cost of this institution was something over £400 per bed; and, seeing that it was to serve the purposes of two small counties with a total population of 200,000, it speaks highly for the enterprise and generosity of the county councillors when one contrasts with it the comparatively meagre expenditure by some of our Australian States. Incidentally I may here remark that in England the average cost of new, larger asylums, at that time, was £250 per bed, and by way of contrast, the initial cost of the Mental Hospital, Mont Park, worked out at £230 per bed.

I do not believe it possible for anyone to have a more instructive and interesting experience than that which fell to my lot at Talgarth. A medical superintendent may not be a walking encyclopædia, but at any rate he requires to be something more than a mere Jack of all trades. His various officers will expect him to discuss with them engineering, farming, catering and clothing details *et cetera*, with some show of authority, even though it may be very embarrassing at times when one finds oneself confronted with problems not included in the medical curriculum. I take it that I may claim to have accomplished this task with some degree of success; for I carried the recommendation of the Lunacy Commissioners and the goodwill of the Committee of the Talgarth Asylum when I applied, in the autumn of 1904, for the position of Inspector General of Insane in Victoria. A happy interview with the Honourable W. H. Irving, then Premier of this State, resulted in my landing at Port Melbourne on February 14, 1905. From this date my experi-

ences become almost exclusively Australian, and I was entrusted with a task that might well satisfy any medical man's ambition.

The ancient history of this department may be of interest to you, for it begins before the State of Victoria came into existence. The old asylum at Yarra Bend was proclaimed in 1846 as a ward of Gladesville Mental Hospital, the principal asylum of the Mother State. There were also certain stockades in Melbourne and Carlton wherein lunatics, inebriates and other unfortunates were confined for longer or shorter periods; but the massive bluestone wards, with their high brick walls and twelve-foot fences, demolished but a few years ago, testified to the current belief that insanity was a crime to be treated in prison-like surroundings and gloomy cells. The discovery of gold in Victoria and a rapidly increasing population necessitated additional accommodation for the insane; and on the advice of Dr. William Paley, who was brought from England to take charge of the department, new asylums were built at Ararat and Beechworth, and opened in 1867. In this year also a new metropolitan asylum was commenced at Kew. The plans of these asylums were modelled on those of Connolly, who was responsible for the long gallery wards of the earlier London asylums at Hanwell and Colney Hatch. Although these had been extensively copied, they were already beginning to be out of date at the time they were followed here. At any rate, they were not particularly suitable for this climate, although a considerable advance on what my earlier colleagues affectionately referred to as "the dear old Bend". Subsequently other buildings, regarded as unsuitable for juvenile delinquents, at Ballarat and Sunbury, were handed over to the department as shelters for the ever-increasing numbers of chronic cases.

When in 1905 I took over the charge of the department from the late Dr. J. Vernon McCreery, I found that it consisted of six asylums and the block known as the Idiot Cottages. The patients totalled 4,768, and in their care the Inspector of Asylums was assisted by six medical superintendents and eight medical officers—that is, approximately one medical man to 350 patients. There were also a dispenser and two nurses with hospital training. The department was in a very unhappy state; there was a sad lack of harmonious cooperation, and practically no scientific research was going on. One-third of the staff were merely temporary employees, and whenever possible annual increments of pay were stopped and no promotions were made. Generally the staff was numerically insufficient and the courses of training were suspended; no uniforms for the attendant staff and certainly no night nursing worthy of the name were obtainable in the majority of asylums. The fabric of all buildings was being neglected and funds for repairs were down to zero. Gas was the illuminant, sufficient to make darkness visible, in all the wards except at Sunbury, where kerosene lamps were in use. There was no system of winter-

borne sewage anywhere, and in some of the country asylums there was a recurrent insufficiency of water and water pressure. There were no telephone systems; locks were very defective, and there were no labour-saving appliances in the kitchens and laundries. In the latter, open fires and stoves were in use for the heating of irons and the airing of clothes, and in the wash-houses from 20 to 50 female patients spent many hours a day at the wash-tub, standing on duckboards and in an atmosphere so heavily charged with steam that they could hardly be seen at work. The kitchens were equally bad, except the main kitchen at Kew, where female cooks had recently been introduced and some new types of cooking vessels installed. Otherwise the cooking was in the hands of male cooks and patients, and the conditions were more than primitive; they were in fact disgraceful. In the circumstances it can well be understood that the feeding of the patients was anything but satisfactory; the food was not altogether insufficient, but it was certainly monotonous to a degree and very indifferently served.

The wards themselves were ill lit, badly ventilated and overcrowded to the extent of 15% at least; the airing courts, surrounded by high walls or stockade fences, usually shut out any view whatsoever of the surrounding country, which generally was well worth looking at. There was no provision for the isolation of patients with infectious diseases, nor any use of verandas for patients with phthisis, which was an all-too-common cause of death. Asylum dysentery was uncommon, although occasional cases of typhoid occurred, most often in the Beechworth Asylum. Occupational therapy for the patients meant domestic work, chiefly in the wards, kitchens, laundries and sewing-room for the women, and work on the farms and gardens and in the artisan shops for the men. In the asylums at Kew, Ararat and Beechworth, there were dangerous upstairs dormitories, from which there were inadequate or no alternative exits in case of fire; and the appliances for fighting an outbreak were antiquated and inefficient. The tower dormitories at Kew especially, and at Ararat to a less extent, involved considerable risk to patients and staff. Perhaps the worst features of all were the wooden hutments at Yarra Bend and the criminal ward at Ararat. The male division at Ballarat was overcrowded, ill ventilated and without adequate sanitary accommodation.

It fell to my lot to report to the Bent Government on May 29, 1905, that, omitting the question of electric lighting and systems of water-borne sewage, it would cost over £250,000 to establish a receiving house and erect sufficient new wards in the existing asylums to eliminate overcrowding and generally furnish and equip them in accordance with modern ideas and requirements. I stressed, however, the necessity for the complete rebuilding of Yarra Bend after demolition of the existing structures. This was not included in the above estimate. Just prior

to this report the new *Lunacy Act*, passed a year or so previously, was proclaimed, the office of inspector-general was created, and provision was made for the creation of receiving houses, the licensing of private houses for mental patients, and their inspection. The Act provided for the private reception of a patient on presentation of a request in writing by some relative or responsible person, accompanied by the certificates of two medical practitioners, after separate examination, but without the former intervention or authority of a committal order of a Justice of the Peace. The terms and conditions under which patients could be sent to a receiving house or ward for observation and treatment were quite modern and marked an advance on past legislation. They paved the way for the reduction in police-court committals; but there was no recognition of the voluntary principle or transfer clauses from one class of institution to another without repeated certification. The section of the Act dealing with the improper and unauthorized detention (for profit) of a mental patient was vaguely worded and insufficiently deterrent of malpractice. There was no recognition of the important question of mental deficiency, except so far as the definition of a lunatic included "idiot" and "person of unsound mind incapable of managing himself or his affairs". Admission to the separate institution at Kew, known then as the Idiot Cottages, required certification under this heading, although the proposed admission was of a child a few months old.

The Act provided for the continuation of inspection by official visitors, who had power to report to the Minister, and prescribed the character of their inspection, as well as for the appointment of a pathologist, unfortunately on a most unsatisfactory half-time basis. The Inspector General was entrusted with the powers of the Public Service Commissioner, being given greater control and jurisdiction over the members of the staff of the department. Although the conduction of inquiries on oath and the sitting in judgement on his officers was for the Inspector General anything but a pleasant business, I think I may state that it has had a salutary effect on the discipline of the department and has become a guarantee of proper service.

A few months after the Act was proclaimed, and before any definite policy was accepted or buildings were started, an influential deputation approached Sir Thomas Bent and urged that the propositions of the Gillies Ministry should be reconsidered. In 1883 the sale of the lands at Yarra Bend and Kew was contemplated. It was at the time of the boom, and a loan was raised on the prospective sale of the 700 acres of land, with a view to the building of new asylums further out of the metropolitan area. However, the boom burst, the loan money apparently vanished, and the lands remained in the hands of the department, with the exception of a small portion near the Heidelberg Road, which was used for an infectious diseases hospital. To what extent the desire to help lunacy matters masked the wishes of the surrounding municipalities for further park-

lands and building schemes I do not think it desirable to conjecture. But the reasons advanced proved to be sufficiently weighty, so that the Ministry decided that no money was to be spent on these asylums; other sites were to be secured and the two institutions done away with. It was fortunate that the first portion of the direction was not adhered to, for it has taken twenty years to get rid of Yarra Bend, and during that time Kew Hospital has been greatly improved. It was seweraged and lit with electricity; quarters were built for medical officers and nurses, telephones and tell-tales were established, and a new laundry was provided; considerable additions were made to the Children's Cottages, as the Idiot Asylum is now called: a nursery, wards for the bigger boys and girls, a remodelled kitchen and mess-rooms and a new school-room were added; all of these were imperative, owing to the greatly increased number of patients. How long it will be before Kew can be surrendered I cannot guess, although its evacuation has been begun by removal of the children in the cottages as a preliminary step. The creation of the Yarra Boulevard, which winds its way through the pleasant grounds skirting the river, has deprived the Kew Hospital of so much land as to render farming operations almost impossible. How that large building, with its conspicuous towers and its fortress-like foundations, is to be made to disappear, is a task likely to prove the *magnum opus* of even the most enterprising wrecker!

As a result of this government determination, various sites were inspected. Ultimately the land now known as Mont Park was selected by Sir Thomas Bent, and together with the adjoining property, known then as "Strathallen", was set aside for the purposes of the Lunacy Department; this policy was confirmed by the Murray Watt Government later on. It was agreed that a sum of £50,000 should be provided annually, and plans were started by the building of the farm-workers' block for two hundred male patients, of another block for quiet feeble women and some convalescent patients, of central offices, stores and laundry, as well as of cottages for the staff. But drought years ensued, and then in 1914 the Great War started; and it looked very much as though our ambitious programme was to receive a severe setback. Many of our officers and staff enlisted and others were engaged on military work at home; and I am proud to say that the Lunacy Department contributed its share of support to the Defence Department, with volunteers, in the first place, and later with the provision of shelter for those returned men who unfortunately came back mentally affected.

The Royal Park Receiving House was first on loan as a military mental hospital. The laundry workers' block at Mont Park was used as a convalescent unit, Number 14 Australian Auxiliary Hospital, and the main block at Mont Park was built and used for some years as a military hospital, Number 16 Australian General Hospital; a site on the Sugarloaf was assigned for the purposes of a

sanatorium for tuberculous soldiers, and "Janefield" was handed over to the Red Cross to establish a farm for convalescent tuberculous men. In some ways the War was not an unmixed evil; for the Defence Department helped us to erect the main block at Mont Park, and it drew attention to the need for specialists in mental disorders on the consulting staffs of hospitals by appointing certain of the senior officers of the Lunacy Department to the military hospitals. It was shortly after this that the Royal Melbourne Hospital and the Alfred Hospital found it desirable to have psychiatrists on their staff. Furthermore, the interest taken by the Red Cross in the returned soldiers seems indirectly to have stimulated the creation of hospital auxiliaries, first of all in the general hospitals, and then, some ten years later, the auxiliary movement extended to the mental hospitals. This advance can be regarded only as most helpful to patients and staff alike, and calculated to dissipate the age-old distrust surrounding the care of the insane.

One must, however, retrace one's steps to 1914, when an amendment of the *Lunacy Act* was obtained, whereby the voluntary boarder system came into force. This advance sanctioned the early reception of a psychotic or "borderline" person on his own application in writing for admission into an institution registered under the Act—that is, a mental hospital, a receiving house, or a private licensed house. The signature of the applicant was to be witnessed by a Justice of the Peace or medical practitioner, and provision was made whereby the patient could terminate his detention by giving notice in writing to the superintendent or the licensee that he desired to leave in three days' time. The voluntary system has become increasingly popular; 90 admissions in 1915 rose to 427 in 1936, and the average daily number of voluntary boarders in that year was 156. The discharges numbered 336, and only 60 patients required full certification. Over the period of twenty years that the system has been in operation, the discharge rate has been approximately 80%. It is quite obvious that this improvement in the discharge rate is largely due to the fact that an earlier resort to treatment has replaced postponement until the time when certification has become imperative.

The next few years were marked by the development of the work of the mental hospital at Royal Park, by erection of wards for military mental patients, first on the Mont Park estate and then on the contiguous property known as "Bundoora", by the complete evacuation of Yarra Bend and the occupation of the large block at Mont Park. Some attempts were made, not very successfully, to mitigate the overcrowding by the erection of new wards and the development of the boarding-out system, whereby quiet and senile patients were transferred to certain benevolent asylums, chiefly to the home at Castlemaine. Advances in treatment, such as the malarial treatment of neurosyphilitic conditions, were prosecuted; but I propose to speak

more fully in my second lecture on this question when dealing with the more recent remedial measures.

With a view to the extension of the freedom that is possible for many of our patients, the open ward system has been materially increased. Particularly is this the case at Sunbury and Royal Park, at both of which hospitals Dr. Adey has been the principal agent in effecting this desirable innovation. At Mont Park the open door system is being adopted, particularly in the farm workers' and laundry blocks.

The problem of the mental defective has assumed greater importance in recent years, and I desire to pay a brief tribute to my predecessor, Dr. J. V. McCreery, for the valuable work that he commenced some forty years ago in taking the idiot and imbecile children out of the general wards and creating the Idiot Asylum at Kew. The next step, in which I think I may claim to have had some hand, was the establishment of the day schools in Bell Street and Montague by the Education Department. If no very great advance was obtained thereby, it served to demonstrate to the thinking public the extent of this eugenic and social menace and the necessity for the provision of special training and separate institutions for such children; for children they always remain, needing guardianship or segregation. In 1926 the Chief Secretary, Dr. S. Argyle, introduced a bill on this subject. It passed the Legislative Assembly of the State Parliament; but before it could go to the Legislative Council, Parliament was dissolved. A second bill was presented in 1929 by Dr. (now Sir) Stanley Argyle; but curiously it met with the same fate.

Just previously, in 1928, the Federal Government had requested a report on the extent of mental deficiency in Australia. It fell to my lot to make this report, which revealed alarming numbers of mentally defective children in all the States. Quite simply it may be stated (and this is possibly an understatement) that one child out of one hundred of school age is definitely mentally defective, and that two are so dull and retarded as to require special education. It has always been my contention that the former class should be the charge of the Department of Mental Hygiene, or a branch of that department, rather than of the Education Department, inasmuch as mental deficiency is the result of disease—a medical question therefore; educational deficiency and retardation are symptoms and not the basic cause underlying the defect. The residential schools of Travancore, near Flemington, and Pleasant Creek, at Stawell, have been established as a result of this view; but this advance has to go *pari passu* with the task of replacement of the Children's Cottages at Kew. For this purpose wards for the more defective have been opened at Ararat and Beechworth, and the delightful property at Janefield is now being developed to take the remainder of the children from Kew and the overflow from the residential schools, with the object of developing a colony for mental defectives on the

lines of the more recent institutions that are operating so successfully in England and elsewhere. It is a source of some satisfaction to think that during the last ten years some progress has been made, and that quite a considerable proportion of the requests and recommendations that one has been urging for over a period of thirty years have been granted. All the mental hospitals have been supplied with water-borne sewage systems, and this has rendered possible improvement in the lavatories and bathrooms. Hostels for nurses have been erected at Mont Park, Ballarat, Sunbury, Beechworth and Ararat; modern and well-designed wards, giving additional accommodation, have been established at Mont Park, Bundoora, Ararat, Beechworth and Sunbury; an isolation block for infectious patients is functioning successfully at Mont Park; but apart from these essentials one can point with satisfaction to the progress that has been made with occupational therapy. The centre at Mont Park is proving to be of use to departments other than our own. Cinemas have been established in some of the hospitals, and most of the wards have been equipped with wireless receiving sets. Thanks to the energy of the auxiliaries, a canteen and a hairdressing saloon have been established at Mont Park, and greater interest has been taken in the entertainments provided for the patients.

With the proclamation of the *Lunacy Act* of 1905 provision was made for the care of well-to-do patients in private licensed houses. At one time or another licenses have been granted to five such homes; but at the present time there are only two carrying on this most necessary work. The difficulty of establishing these institutions on thoroughly sound lines has been considerable, for many reasons. First, a reasonably strong financial backing and good medical support are vital to success. Next, the number of patients whose property or relatives could supply an adequate remuneration was by no means great, and the dislike of the process of certification, only partially mitigated by the voluntary system, was always a drawback. A common belief that immediately a person was declared of unsound mind the Master in Lunacy and Equity took charge of all his property was anything but helpful; besides, many old-established prejudices exist against the calling of a spade a spade. All these factors operated adversely against the success of the private registered mental home. Nevertheless, these homes have done and are still doing admirable work; they are closely supervised by the official visitors and the director, and they merit genuine support at the hands of the medical profession. The alternatives are either the establishment of payment wards by the Government, or intermediate institutions comparable with those which have been recently commenced so successfully by certain religious or philanthropic bodies. The latter course I have consistently but, I regret to say, fruitlessly recommended. It would not interfere with, but would supplement, the purely voluntary hospitals, which I am satisfied will come into being if only sufficient

pressure can be brought to bear on State Governments.

At the end of 1933 an amending Act was passed, the *Mental Hygiene Act*, whereby the nomenclature of the department and the designation of its hospitals and of some officials was changed, with the intention of widening the scope of its work and making it possible to include the new *Mental Deficiency Act* when it becomes an accomplished fact. I look forward confidently to a reconstructed and progressive Department of Mental Hygiene.

TRAUMA AND INTRACRANIAL TUMOURS.¹

By LEONARD B. COX,
Melbourne.

It is not my intention tonight to attempt an exhaustive examination of the relation of trauma to the origin and course of intracranial tumours. I should like, however, to record certain cases in which the courses of tumours seem to have been influenced by injury to the head, and at least one in which an injury may have caused the tumour.

As to whether intracranial tumours may arise from injuries to the head, that is a vexed question. That injury to the head may cause symptoms to arise in a patient whose head contained a tumour, until then latent, is more certain.

Many of the older authors believed that intracranial tumours might arise from injury to the skull. Gerhard considered that 17% of gliomata so arose; Muller, 18.7% of frontal lobe tumours; Monakow, 10% of 100 cases *et cetera*. Marburg,⁽¹⁾ in 1934, in a monograph upon this subject, collected data of 55 intracranial neoplasms, five granulomata and five cysticercus cysts, from the literature and from his own experience, which he considered were caused by trauma. He concluded that there were no types of intracranial tumour that might not be conditioned by injury.

Nevertheless, such a contention seems almost impossible to prove; for who can say what was present in a brain before injury? Unless tumours can be produced experimentally, or should commonly occur in the positions of brain scars, proof of their origin is difficult to arrive at. Therefore, many modern authors remain unconvinced that brain tumours may arise from injury to the head, or allow but an occasional case. For it may be asked, why have not many intracranial tumours been found to have arisen at the sites of numerous cranial injuries which occurred during the Great War?

Statistical studies based upon series of intracranial tumours are apt to be misleading. A history of head injury is common, and the incidence of intracranial tumours is surprisingly high. The difficulties

of this method of study are well shown by the figures of Parker and Kernohan.⁽²⁾ Of 431 patients suffering from gliomata, they found a history of head injury in 13.4%, although regarding this history as being significant in only 4.8% of cases. Of 431 other cases of various diseases, a history of head injury was obtained in 10.4%; but of 200 normal persons no less than 35.5% were said to have sustained a head injury. It might almost be deduced that injury to the head acts as a preventive not only of intracranial tumour, but of other diseases as well.

Although I have encountered other patients who have attributed their tumours to previous injury, I have drawn the material for this study from a series of 150 consecutive proved intracranial tumours of all types. Although a high proportion of the population can recollect a previous head injury if questioned, only eight of these 150 patients had had severe head injuries, or injuries which, although not severe, were sufficient to elicit symptoms later shown to be related to an intracranial tumour. Of these eight, two had sustained at the War injuries which I do not believe were in any way related to their tumours, whilst one other had probably had symptoms of tumour prior to his injury. Of the remaining five (3.3%), I should like to discuss four. In two of these cases the injury may have caused the tumour; in the other two the tumour was almost certainly present at the time of injury, whilst in the fifth, although a moderately severe head injury preceded by two years the clinical onset of a cystic astrocytoma of the cerebellum, the site of the injury was unknown and I am doubtful of the relationship.

Clinical Histories.

CASE I.—In August, 1931, a man, aged thirty years, in exemplary health, climbed 20 feet from the ground to the top of a loaded truck. He there slipped, seized a rope which broke, and fell to the ground, where he struck his head in the left parietal region. He had no recollection of the subsequent hour and a half, but was said to have staggered about and to have vomited. He was taken home, and remembers little of the rest of the day. There he suffered from headache and was treated for concussion. He remained at home for three weeks, and then resumed work. After working for two weeks, one day while hooking a horse into a truck he felt his head whirl, and a horrible feeling passed from his head down the back to the right leg, which began to move involuntarily. He then lost consciousness. These seizures at first recurred every two weeks, but later at periods of about six weeks. No fracture was revealed by X ray examination, and he saw several consultants, a diagnosis of hysteria being seriously considered. In certain of the attacks consciousness was not lost, but instead he showed great mental agitation.

In May, 1933, I was asked to see him on behalf of his trade union. The description of the attacks, given by all who had observed them, seemed to show that they were truly epileptic. Moreover, they were so-called "reflex epilepsy", for they could be induced by handling of the right leg. Indeed, so terrified was he of a person's touching this leg that he threatened to strike me should I do so. He had slept in a chair for many months, and had not removed his trousers for three months.

In the limited examination which he allowed me, I found no neurological abnormality. I believed him to be suffering from traumatic epilepsy and he obtained compensation.

He afterwards attended my clinic at the Alfred Hospital and obtained great benefit from the use of phenobarbital.

¹ Read at a meeting of the Victorian Branch of the British Medical Association on August 3, 1935.

The attacks ceased to be generalized, and were true Jacksonian attacks confined to the right leg. I witnessed two of these attacks; in them it was necessary to stand him against a wall and to stand upon his foot, or his leg would painfully flex, the foot passing behind the buttock. The attacks were frequently followed by headache.

Three years and four months after the original injury the leg was little affected by the attacks. The right hand now was the site of the involuntary movements. These could be controlled if the hand were placed in the pocket and the arm firmly pressed against the wall. It was then noted that he could not articulate properly in the attacks, although no weakness or involuntary movements of the face were noted.

In March, 1935, he had a very severe attack, followed by a right hemiparesis. He was admitted to hospital in a series of fits. No papilloedema was present.

A large tumour of the left post-frontal region was found at operation by Dr. Hugh Trumble. It contained a large cavity filled with blood. The tumour presented on the surface of the brain in the region of the Rolandic fissure adjacent to the longitudinal sinus. It was easily removed. During closure of the wound a sudden uncontrollable hemorrhage occurred, and the patient died.

At autopsy it was found that the tumour had been almost completely removed except for a narrow rim in one position. Its relation to the fissures was determined by dissection. It involved both the pre-central and the post-central gyri in their uppermost portions, and extended deeply into the white matter to about the level of the sulcus singuli (Figures I and II). Its histological structure was that of an actively growing *glioblastoma multiforme* (Figure III).

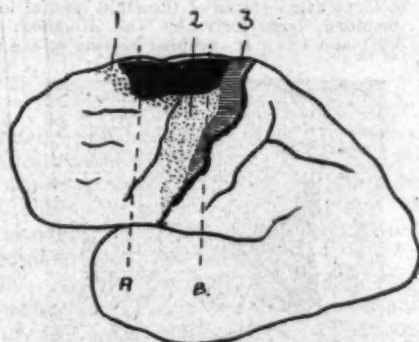


FIGURE I.

1: Area extrapyramidalis (6aβ); 2: area extrapyramidalis (6aα); 3: area pyramidalis (area 4).

Here, then, is the case of a man who suffered from head injury in the region of the left parietal bone. Five weeks afterwards he had an epileptic seizure preceded by movements in the right leg. These attacks persisted for three years and eight months, and were considered to be of the nature of traumatic epilepsy. At the end of this period a series of convulsions occurred, associated with a right hemiparesis; these were undoubtedly caused by hemorrhage within a tumour. The tumour involved the upper part of the left Rolandic fissure, and was an actively growing *glioblastoma*.

Are we to assume that the whole occurrence was a remarkable coincidence, and that a tumour lay beneath the area afterwards to be injured, or did the injury cause the tumour? There is, of course, no possible means of proving either supposition; but I doubt whether any judge or lay jury would find other than that the tumour in this case was

caused by the injury. For they would argue: here is a tumour of a very malignant nature, one that on medical evidence appears rarely to show a clinical course of over a year; surely there must have been some changes going on in the brain under the site of injury, which earlier resulted in epilepsy and later in the highly malignant tumour. The possibility that a very minute tumour happened to lie beneath the area struck must be remote.

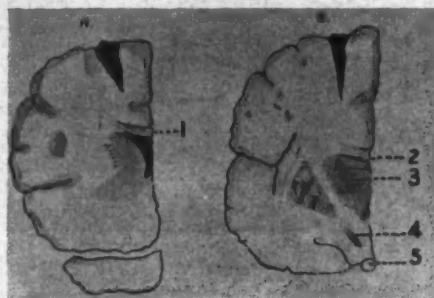


FIGURE II.

1: Corpus callosum; 2: nucleus caudatus; 3: thalamus; 4: nucleus hypothalamicus; 5: corpus mamillare.

Nevertheless, it is not impossible that a tumour, or collection of potentially malignant cells, did lie beneath the area injured, for intracranial tumour is not an uncommon condition. Furthermore, as I shall attempt to show in my next case, injury may render a relatively slow-growing tumour more malignant. I would, however, add that in the medico-legal sense I believe that the injury did cause the tumour, meaning that had the patient not sustained the injury he might not have had the tumour, or might not have suffered from it for a considerable time after he did.

CASE II.—A man, aged fifty-three years, while at work, was struck on the head by a packing case. He suffered immediate headache, but no concussion, and continued at his work. Four days later he collapsed at work and was sent home to bed. He was not able to work again. Some change in his vision was noted, although he felt fairly well. About two months after the accident it was observed that his memory was defective, and that he did not know the day of the week or the date. He developed a motor aphasia, and could answer questions only by gesture. He was unable to read.

He was seen by me, at the request of Dr. J. Kennedy, four and a half months after his accident. He was then stuporose, and had a right hemiparesis. No papilloedema was present. He was thought to be suffering from either subdural hematoma or tumour. The information given by a ventriculogram was indefinite, and as his condition was desperate, exploration was undertaken by Dr. Trumble. No clot was found and the surface of the brain appeared normal. He died soon after.

At autopsy he was found to have a diffuse astrocytoma of the left temporal lobe extending into the occipital lobe (Figure IV). It was limited above by the Sylvian fissure. Near the posterior end of the fissure a small cyst was found, surrounded by a gelatinous area which even to the naked eye resembled the substance of a highly cellular glioma. Several small hemorrhages were present in this region. The ventricles were undilated.

Microscopic investigation of various areas of the tumour proved most instructive. The tumour had the usual appear-

ances of diffuse gliomatosis: fairly scanty glial cells with the usual remarkable preservation of nerve cells and their processes. Yet in the gelatinous area active proliferation of the neoplastic cells was in progress, the appearances being that of the *glioblastoma multiforme* (Figures V, VI and VII).



FIGURE V.

In this case there seems no doubt but that the diffuse glioma had been present within the brain long before the time of injury. It does, however, seem likely that the tumour had rendered the brain more susceptible to the effect of a relatively trivial injury, and that oedema or hæmorrhage had been produced within its substance. Although there can be no proof, it is probable that these changes within the brain did lead to a more malignant transformation of the relatively slowly multiplying neoplastic cells. Histological studies of the brain show that this transformation has taken place over a small area, while the clinical history suggests that some changes arose within the brain subsequent to the injury.

I should now like to demonstrate a case in which a trivial injury seemed to precipitate the onset of symptoms of a cerebellar tumour.

CASE III.—A single man, aged twenty-four years, in 1934, while playing football, was kicked on the head. He immediately became dizzy and sick, but continued to play. Next day he felt off colour, and vomited. Two weeks later he developed headache and again vomited. For the next month occipital headaches with vomiting were of daily occurrence.

I suspected him of having a cerebellar tumour. Partial confirmation of this was obtained by the appearance of dilated lateral ventricles in a ventriculogram. Dr. Trumble explored the posterior fossa, but no tumour was found. The cerebellar lobes were not greatly deformed.

He made an uneventful recovery and remained well for four months. Then his symptoms recurred. He now showed unquestionable signs of involvement of the right lobe of the cerebellum and increasing intracranial pressure. Exploration by Dr. Trumble revealed a large tumour of the right lobe of the cerebellum, subcortical and extending across to the left side. It was only partially removed, as it proved to be a highly malignant medulloblastoma. Death occurred next day. At autopsy the tumour showed an unusual feature for a medulloblastoma, the presence of a large cyst.

Although no tumour was found at operation about two months after the injury, and one of large size was found six months later, I feel that in all probability a small cerebellar tumour was

present at the time of injury. Nevertheless, it is likely that the injury hastened its evolution.

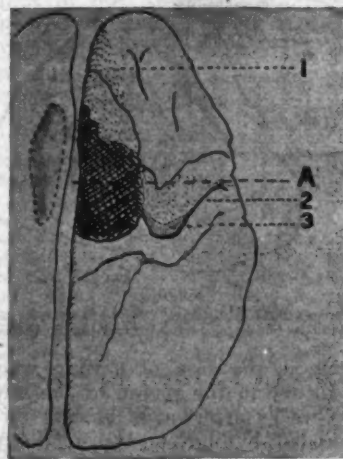
In the last case to be described, the interval between a severe injury and symptoms of tumour was considerable. Nevertheless, as a tumour was ultimately found, which must have been present for many years, I feel that I should describe this case to you.

CASE IV.—In 1917, a boy, aged eighteen years, had a bicycle accident, and sustained an injury to the right temple. He was unconscious for over two hours.

In 1929 he commenced to take fits. These would commence with involuntary movements of the left forearm, which would flex, after which he would become unconscious. Owing to the position of the injury and its relation to the obvious site of the origin of the motor discharge initiating his attacks, the brain was explored, with negative results. However, after the exploration he did not again lose consciousness, the attacks now being confined to movements of the left arm followed by movements of the leg.

When seen by me in February, 1935, he was lethargic, unable to concentrate and of defective memory. A mild left hemiparesis was present. Exploration was decided upon. Unfortunately, before this could be carried out he suddenly became comatose and died.

At autopsy numerous hæmorrhages, some of large size, were found within the pons. They were thought to be responsible for his death. No internal hydrocephalus was present. A large astrocytoma of the right frontal lobe was present, bounded posteriorly by the Rolandic fissure (Figures VIII and IX). It occupied portion of the surface

FIGURE VIII.
1: Area 6aß; 2: area 6as; 3: area 4.

of the brain, extending down to the corpus callosum and being limited by the roof of the lateral ventricle. It extended by way of the corpus callosum to the other side of the brain, where it contained a large cyst. The main portion of the tumour contained an even larger cyst.

Here again, it is impossible to prove that tumour and injury are not coincidences. One can only point out that the injury occurred to the front of the brain on the side of the tumour; that even though the first clinical signs of tumour occurred twelve years after the injury, the tumour was of an extremely slow-growing type, and death did not occur until nearly six years later.

Discussion.

It has been pointed out, during the progress of the discussion, that a brain containing a tumour is more likely to be injured by a blow than a normal brain. This seems to be true also for areas of the central nervous system containing simple malformations. Thus I recently reported a patient whose cord contained two slit-like cavities, and who ultimately developed an intramedullary tumour in association with the upper one.⁽³⁾ Five years before the main onset of the symptoms that caused her to

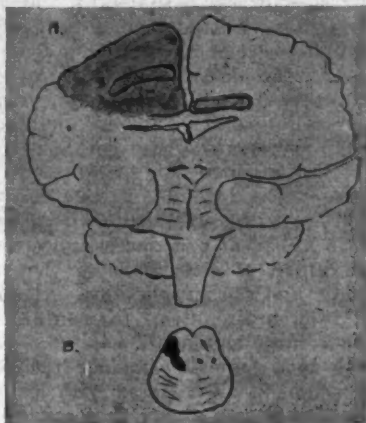


FIGURE IX.

seek advice, she had fallen upon her back. Paresis and anaesthesia of the lower limbs, of exactly the same type as occurred later, immediately developed. There could be no question but that this was occasioned by the effects of the fall upon the area of cord about the lower cavity.

I also recently obtained the brain of a young man which contained a series of cysts within one half of the brain stem and the thalamus. The appearances of the specimen strongly suggested a developmental origin for the cystic condition. It was interesting to note that the clinical condition, which was largely one of a pseudo-bulbar palsy, was initiated by a severe fall. After consciousness had returned, this state was observed immediately and for the first time. Although improvement occurred, the spasticity and weakness were present for many years before death.

A brain already the seat of inflammation would certainly have, too, an enhanced susceptibility to injury. This may explain the apparently traumatic origin of many of the inflammatory and degenerative conditions of the central nervous system.

Conclusions.

1. In a series of 150 consecutive cases of intracranial tumour, trauma appeared to have been related to the onset of symptoms in four cases (2.6%) or possibly five (3.3%).
2. In two of these intracranial tumour was almost certainly present in the brain at the time

of the injury. In one the histological study strongly suggested that the injury had caused focal changes within the tumour, about which a considerably enhanced rate of subdivision of the neoplastic cells was taking place.

3. In two cases tumours were found in the regions of known sites of injury of a fairly severe grade. In one case it is likely that the tumour did follow the injury; in the other it is possible that the tumour followed the injury, for, although a long period elapsed between its clinical onset and the injury, it was of a slowly growing type.

4. It is thought that usually when the symptoms of intracranial tumour follow injury to the head, a tumour has been present prior to this injury. This injury may render a tumour more malignant. Perhaps occasionally a tumour may follow injury.

References.

- (1) O. Marburg: "Unfall und Hirageschweulst", 1934; reviewed in *Archives of Neurology and Psychiatry*, Volume XXXIII, 1935, page 914.
- (2) H. L. Parker and J. W. Kernohan: "The Relation of Injury and Glioma of the Brain", *The Journal of the American Medical Association*, Volume XCVII, 1931, page 535.
- (3) L. B. Cox: "A Case of Syringomyelia Associated with an Intramedullary Tumour, with Remarks on the Relation of the Gliosis to Tumours of Ependymal Origin", *The Journal of Pathology and Bacteriology*, Volume XLIV, 1937, page 661.

HAEMORRHAGE OF THE BRAIN STEM AS A SIGNIFICANT COMPLICATION OF INTRACRANIAL TUMOURS.¹

By LEONARD B. COX,
Melbourne.

Introduction.

DURING the course of an intracranial tumour it is by no means uncommon for a patient to become comatose, suddenly, or gradually over a few hours. This complication may occur quite unexpectedly and for no apparent reason.

When such a tumour lies within the posterior fossa the incident, particularly if it is associated with respiratory failure, may be thought to be an indication of a medullary crisis. This descriptive name suggests a disturbance of certain vital centres. It may result from anoxæmia of the bulb subsequent to a sudden rapid increase in intracranial pressure, from a direct pressure of some mass upon the brain stem, or from the occurrence of œdema in this region.

A medullary crisis is difficult to demonstrate pathologically. Hemorrhages or thromboses within the brain stem would offer an adequate pathological basis for the failure of the vital centres, but it is unusual to find these in association with tumours of the posterior fossa. The medullary crisis remains, therefore, a clinical rather than a pathological entity.

¹ Read at a meeting of the Victorian Branch of the British Medical Association on August 3, 1938.

CASE I.—A man suspected of having a cerebellar tumour was admitted to the Alfred Hospital. He died in his sleep before operation could be undertaken. A large cyst of the cerebellum, with a small mass of tumour, was found at autopsy. There was no obvious lesion of the brain stem.

Even when the tumour is supratentorial it may be difficult to determine the cause of death.

CASE II.—A man, aged thirty-eight years, lay in hospital in a confused state. Neurological examination was difficult, and a ventriculogram was advised. A large cyst of one parietal lobe was inadvertently tapped and filled with air. Later respiration ceased. Although, after the evacuation of the air from the cyst, aeration of the lungs was maintained by an intratracheal catheter for many hours while the heart beat strongly, spontaneous respiration was never resumed. At autopsy no reason for the failure of respiration or for the unconscious state could be found. No vascular lesion was present within the brain stem, which in fact seemed rather paler and more ischaemic than normal.

For many years it has been observed that the massive cerebral hæmorrhages, so common in clinical medicine, have been commonly accompanied by less significant hæmorrhages within the brain stem. The incidence of this occurrence has been said to be as high as 30%.⁽¹⁾ It is usually obvious in such cases that the large hæmorrhage of the hemisphere is the primary condition, and that small pontine medullary vessels have subsequently ruptured. Why these small vessels should be particularly vulnerable is by no means clear. That they do frequently rupture, in the presence of rapidly replacing supratentorial lesions, remains undoubted. It may then be asked whether they show this same vulnerability in the presence of such less rapidly replacing lesions of the brain as supratentorial tumours.

It will usually be found in a series of autopsies conducted upon patients dying from intracranial tumours that the incidence of hæmorrhages of the brain stem is surprisingly high. Until recent years this incidence does not seem to have received much attention. In 1926, however, Wilson and Winkelmann⁽²⁾ reported that they had found them in three of fifty-two cases of intracranial neoplasm and in one of eleven cases of abscess. Others have since reported their occurrence, and various explanations have been offered for the special vulnerability of the vessels affected.

Moore and Stern⁽³⁾ have recently given us the results of a study of the brains from 130 cases in which tumours or abscesses were present.

Of the first hundred brains that they examined, in consecutive series, they found that in fourteen, accompanying vascular lesions of the pons, the mid-brain or the occipital lobes were present. The latter lesions are not germane to our discussion and will not be considered here. As far as can be gathered, in ten of these brains hæmorrhages were found lying within the mid-brain or pons. We are not informed what percentage of tumours of the posterior fossa occurred in this series; but it is stated that these hæmorrhages were completely absent from brains with infratentorial tumours. Clinical signs indicating a pontine or mid-brain

lesion were not usually noted. Moore and Stern commented as follows:

From our experience we feel that when there is a sudden onset of profound unconsciousness, similar to certain apoplectic pictures in other diseases, in a case of brain tumour, it is suggestive of a complicating hæmorrhage in the lower brain stem, even though this clinical picture also occurs in tumours without the complicating pontine hæmorrhage.

They add that it is always a fatal complication.

The diagnosis and treatment of intracranial tumours are a disappointing pursuit. We employ our reasoning powers, perhaps to find our logic faulty, for factors exist of which we are unaware. Our patient may become unexpectedly comatose. We are haunted by the idea that all is due to increasing intracranial pressure. We administer glucose intravenously or saline solution by the rectum; but our patient remains comatose. Or perhaps in haste we operate. The tumour is found and removed, although the brain, to our surprise, may not seem under as great a pressure as we anticipated. Our operation is apparently a success; we confidently await the return of consciousness; but this does not eventuate and the patient dies. At autopsy we may find the brain stem to contain multiple hæmorrhages, large and small.

I do not wish here to consider the reason for loss of consciousness associated with lesions of the brain stem. Suffice it to say that any epidemic of *encephalitis lethargica* should prepare us for such an eventuality. Indeed, concussion itself has been suggested as resulting from the occurrence of small hæmorrhages about the Sylvian aqueduct, and small tumours of the base of the brain are not infrequently associated with disturbance of the conscious state, be it only of the nature of hypersomnia. I shall therefore immediately refer to my own material.

This is of necessity confined to autopsy material. I have studied my reports of the examination of the brains of 75 patients dying from intracranial tumours. Fortunately the series contained fifty supratentorial tumours of unselected types, including one subdural hæmatoma, twenty cerebellar and cerebello-pontine tumours, and five tumours of the brain stem.

In the fifty supratentorial tumours, significant hæmorrhages of the brain stem were present on no less than ten occasions (20% of cases); in the twenty-five tumours of the posterior fossa, no hæmorrhages were encountered in the brain stem. The incidence in the entire series of 75 was, therefore, ten, the same number as occurred in the National Hospital series of 100.

I should like now to recount to you somewhat briefly the histories of these ten patients, for they are instructive. Only four had been operated upon, and it is likely that the hæmorrhages preceded operation in at least three cases.

Clinical Histories.

CASE III.—R., a man, aged forty years, was unconscious for some hours after a motor-car accident. He later returned to work; but three months after the accident

he complained of giddiness and of weakness of the left side of the body. He became comatose. A right fronto-parietal subdural clot was removed, apparently successfully, by Dr. Hugh Trumble. The patient was deeply unconscious after operation and died from hyperthermia, instead of recovering consciousness as was anticipated. At autopsy numerous hæmorrhages were found in the pons and mesencephalon (Figure I). It is quite possible in this case that the hæmorrhages were responsible for the coma prior to operation and for the hyperthermia after.



FIGURE I.

Case III. Pontine hæmorrhages. The patient died after operation for a subdural hæmatoma.

CASE IV.—P., a man, aged fifty-nine years, was found to have a left homonymous hemianopia and defective sensation of the cortical type on the left side. He had no papilloedema and his cerebro-spinal fluid pressure was only 150 millimetres of water in the horizontal position. He was stuporose when this was estimated, and rapidly became more so afterwards. At operation by Dr. Trumble, portion of a right temporal glioblastoma was removed. The brain was not under great pressure. The patient did not regain consciousness and died after some hours. At autopsy the reasons for this, until then, inexplicable death were not apparent until the brain stem was examined.

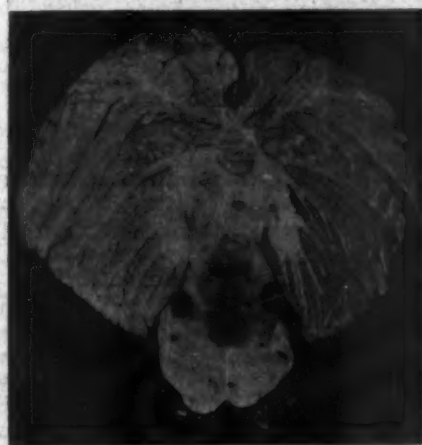


FIGURE II.

Case IV. Pontine hæmorrhages. The patient died after operation for a right temporal glioblastoma.

Numerous hæmorrhages were found within the dorsal portion of the pons, extending up into the mesencephalon (Figures II and III). There seems every reason to believe that in this case, in which the intracranial pressure was not found to be raised, the terminal coma was related to the occurrence of the numerous vascular lesions in the brain stem.

CASE V.—M., a man, aged fifty-nine years, had suffered for six months from headache, right-sided motor Jacksonian attacks and hallucinations of smell. He began to deteriorate mentally and became comatose. He had papilloedema. In the year in which this occurred (1929) only a decompression operation was performed. He died in a few hours. At autopsy a large glioblastoma of the right temporal lobe was found. A large central hæmorrhage was found in the mesencephalon and pons, approaching the surface in the pontine region. It seemed probable that this was the cause of death.

CASE VI.—G., a man, aged forty-seven years, had suffered from headache and confusion for two months. He became suddenly comatose and was admitted to hospital. A decompression operation was performed (1930). At autopsy a left temporal glioblastoma was found, and scattered hæmorrhages were present in the dorsal half of the pons.

CASE VII.—This case has already been reported.⁽⁴⁾ Here death occurred suddenly during the course of an astrocytoma of long history. Hæmorrhages were found in the upper part of the pons and in the lower part of the mesencephalon. A few minute hæmorrhages were also present about the aqueduct. They lay mainly in the dorsal parts of the areas concerned.

CASE VIII.—W., a male, aged sixty years, had been suffering for a few weeks from some degree of mental failure. Coma suddenly occurred while he was sitting at table. At autopsy a left occipital glioblastoma was found. Many large hæmorrhages were present in the mid-brain and the pons.

CASE IX.—F., a man, aged fifty-two years, had previously suffered from malaise and occasional headache. He became suddenly confused and then comatose. At autopsy a left temporal glioblastoma was found. A large hæmorrhage was present in the dorsal part of the pons.

CASE X.—H., a man, aged forty-seven years, had complained of paresthesia of the upper part of the body on the left side. Coma occurred suddenly; the pupils became fixed, the right being larger than the left. A right temporal glioblastoma was found at autopsy. A hæmorrhage, five millimetres in diameter, was found in the basal half of the pons.



FIGURE III.

Case IV. Hæmorrhage in mesencephalon.

CASE XI.—A demented woman was noted to have slight hemiplegia, with some difficulty in swallowing. She became comatose and died. A large nodule of secondary carcinoma was found at autopsy, involving the parietal and occipital lobes on the left side. Recent hæmorrhages were found in the posterior portion of the mid-brain on the right side. The primary focus for the growth was in the ovary.

CASE XII.—D., a male, aged thirty-six years, had suffered for six weeks from Jacksonian attacks involving the face. He developed sudden hemiparesis with aphasia, sank into coma and died. At autopsy a large left frontal glioblastoma was found, into which extensive hæmorrhage had taken place. Multiple petechiae were present in the mid-brain. In this case it is likely that death was caused by the hæmorrhage which had taken place into the tumour. The petechiae of the mid-brain were probably secondary to this.

Discussion.

From this small series of cases it will be observed that hæmorrhages of the brain stem are of common occurrence with those intracranial tumours situated above the *tentorium cerebelli* that came to autopsy. Although signs that might indicate with certainty the position in which they occur are not usual, these hæmorrhages may be associated with coma of sudden onset or with developing confusion over a few hours. Whether such hæmorrhages are invariably fatal, as is stated by Moore and Stern,⁽³⁾ would be impossible to prove. They may be suspected when rapid coma occurs in a case of known intracranial tumour and when there is no obvious reason for this coma. Needless to say, they do not respond to therapy with hypertonic saline solution or glucose. They appear to be responsible for some post-operative deaths when the tumour has been removed apparently satisfactorily.

The reason for the occurrence of hæmorrhage of the brain stem in both supratentorial hæmorrhages and tumours cannot yet be stated with any certainty. Moore and Stern found no particular evidence of general arteriosclerosis and did not regard this as an essential factor. We must certainly admit that the vessels concerned, usually long ascending branches of the basilar artery, are particularly prone to rupture when replacing lesions occur above the tentorium. Under these conditions their walls seem insufficiently strong to resist the pressure of the contained blood. As it is unlikely that their walls would suddenly weaken, it is probable rather that the pressure of their contents has suddenly increased. Yet, as other vessels that do not rupture would participate in this greater strain, these basilar branches must have some inherent weakness of their walls. It is often seen that the part that ruptures is placed in the dorsal part of the mid-brain and pons. In this region the supporting glial tissue seems looser and is not reinforced by the warp and woof of such well-myelinated bundles of nerve tracts as are found in the ventral portion. This may be of some importance.

Is there any reason why the pressure should be increased in the basilar artery and its branches in the presence of replacing lesions of the cerebral hemispheres? We must note the two sources of blood supply to the brain—the circulation in the cerebral hemispheres derived mainly from the carotid arteries, and the circulation in the cerebellum and brain stem derived mostly from the vertebral arteries. These two systems are connected by the posterior communicating arteries, vessels that vary greatly in calibre in different individuals. A displacing lesion of the cerebral hemispheres would diminish the volume of blood in the carotid circulation. This would surely divert blood into the vertebral artery system by way of the posterior communicating vessels, with increase in pressure in the basilar artery and its branches. Such a deviation of circulation would occur much more rapidly should the displacement of a supratentorial hæmorrhage or oedema be added to that of the tumour.

In the majority of cases the vascular lesions here described are true hæmorrhages. In one case, not in this series, apparent petechial hæmorrhages proved on dissection to have resulted from the thrombosis of a small subependymal vein (Figures IV and V). The petechiæ in this case, however,

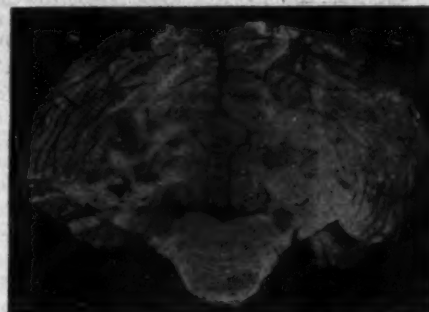


FIGURE IV.
Hæmorrhages of the white matter of the cerebellum occurring in a patient dying from multiple meningiomata.

did not follow the course of a small branch of the basilar artery, but were situated in one middle cerebellar peduncle and in the dorsal part of the pons and the white matter of one lobe of the cerebellum.

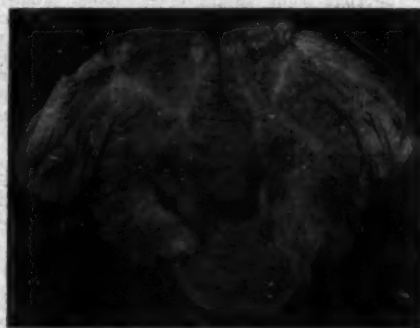


FIGURE V.
Same case. Thrombosis of a small subependymal vein.

Conclusions.

1. The frequency of occurrence of hæmorrhages of the pons and mid-brain in patients dying from supratentorial intracranial tumours is stressed.
2. These were found at autopsy in ten cases out of 49 of supratentorial tumours and in one case of subdural hæmatoma. They were not observed in twenty-five tumours of the posterior fossa.
3. Their clinical significance is briefly discussed.

References.

- (1) J. H. Biggart: "Pathology of the Nervous System", 1936.
- (2) G. Wilson and N. W. Winkelmann: "Localized Proliferations of the Arachnoid: Possible Relation to the Origin of Tumours", *Archives of Neurology and Psychiatry*, Volume XV, 1926, page 455.
- (3) M. T. Moore and K. Stern: "Vascular Lesions in the Brain Stem and Occipital Lobes occurring in association with Brain Tumours", *Brain*, Volume LXI, 1938, page 76.
- (4) L. B. Cox: "Trauma and Intracranial Tumours", *The Medical Journal of Australia*, in the press.

SUDECK'S ATROPHY.¹

By NORMAN LITTLE, M.B., M.Ch.Orth.,
Sydney.

SUDECK'S atrophy, or post-traumatic osteodystrophy at joints, is a condition that may follow any injury to the extremities. Its main characteristic is the bony atrophy that occurs in the vicinity of and distal to the site of injury, associated with much pain and disability. Before discussing the pathology *et cetera*, of the condition, I shall outline a typical mild case.

Case History.

S.R., a barman, aged fifty-three years, was referred to me by his medical attendant on July 1, 1937. His history was that he had dropped a case of empty bottles onto the dorsum of his left foot ten weeks previously; the case had fallen about 75 centimetres (30 inches). The foot had been bruised, and had become slightly swollen and very painful; no fractures had occurred. He had continued working for the rest of the day, but the following morning had been unable to go to work and had rested at home. On the third day he went to a public hospital and was advised to use contrast baths. Two days later the pain had become so severe that he consulted his own doctor. At this time the pain was confined to the dorsum of the foot in the region of the navicular and internal cuneiform bones. "Elastoplast" was applied and an arch support was ordered. The former was removed after three weeks, and the patient periodically rubbed the foot with a liniment for another week. He was then referred to his employer's doctor, and the foot was immobilized in plaster for two weeks. The night the plaster was removed the foot became swollen and turned a plum colour. Massage was given for a week without any benefit. At this stage it was considered that he was malingering, and he was sent to a consultant, who declared him fit for work.

His complaints, when I first saw him, were that he had pain, swelling and discoloration of the left foot; that it was difficult to walk, because use increased the pain; and that there was a feeling of stiffness in the foot. He had great difficulty in walking up or down hill, because the pain was very severe whenever he had to put his body weight forward onto the front of the foot; this was more pronounced on the inner side of the foot. Rest relieved the pain, and he slept reasonably well. If he attempted to stand on tip-toe, he felt a sudden, sharp, shooting pain along the dorsum of the inner side of the foot.

On examination I found the patient to be an intelligent and well-built man of middle age. He stood with his left foot in a slightly *varus* position, and with an accentuation of the normal arch. Some redness and swelling were present in the region of the internal tarsometatarsal joint of the left foot. When all the body weight was taken on the left foot, some eversion of the *os calcis* and flattening of the arch occurred; and the procedure caused pain in the region of the internal cuneiform. He could roll onto the outer border of his left foot. There was some falling of the transverse arch. The area of redness and swelling was hot to the touch, and there was pronounced tenderness on the medial and plantar surfaces of the first metatarsal bone, especially at its base. Movement of the joints was limited on the inner side of the foot. There was no tightness of the *tendo Achillis*, and the ankle joint was normal.

Whilst examining the ankle joint I found an area the size of a sixpenny piece on the dorsum of the navicular bone which was very tender. At the conclusion of my examination the redness spread to the region of the first metatarsal and the great toe.

The X ray examination disclosed osteoporosis of the left internal cuneiform, the first metatarsal and the phalanges of the great toe. The atrophy was confined to the bones mentioned and was of the mottled type.

The history, physical findings and X ray picture are typical of the condition first described by Sudeck in 1900, and now referred to as Sudeck's atrophy. This type of bone atrophy is occasionally seen after injuries involving the extremities. The injury may be anything from a compound fracture to a contusion, as in the present case; and the atrophy is almost always confined to the bones distal to the original trauma. The commonest sites for the atrophy are the carpal and tarsal bones; but it is seen in the vicinity of any joint, and has been known to occur in the bones of the knee joint after removal of the meniscus. The bone atrophy is only one of the findings that make the diagnosis; the other two are clinical, and their presence alone should be sufficient to make the surgeon consider the likelihood of Sudeck's atrophy as the cause of the symptoms. They are the presence of stiffness in the joints and the presence of vasomotor changes in a swollen and painful part of a limb.

Three weeks after the patient's first visit to me I injected 0.6 cubic centimetre (ten minims) of alcohol (60%) into the vicinity of the gangliform enlargement on the dorsum of the foot. Three days later he said the foot felt much better; the tenderness was not so pronounced, the vasomotor changes were very slight, and standing on tip-toe with the body weight thrown forwards did not cause pain. He was told to go for long walks and report if anything untoward happened; two days later he returned in a very despondent mood, because the pain and redness had returned. At this visit there was pronounced tenderness over the dorsum of the navicular bone, and the vasomotor changes were as obvious as on the first visit; but standing on tip-toe did not cause him much discomfort. On this occasion I injected 1.0 cubic centimetre (fifteen minims) of alcohol (60%) into the tender spot on the dorsum of the foot. As soon as I began the injection he complained of a pain shooting into the big toe; but this soon passed off, and he was able to walk in comfort within twenty minutes. From this time onwards he began to improve, and resumed work five weeks later.

At the end of another three months he came back to me, complaining of a return of pain in the forefoot. He said he had been able to carry on with his work so long as he could have a few minutes' rest off his feet every two hours. On examination there was no evidence of any vasomotor disturbance. Tenderness was present over the plantar surface of the internal cuneiform. All foot movements were full and free, but there was a *valgus* deformity of the left foot when he was standing. An appropriate alteration was made to the heel of his boot, and after another eight weeks' rest he appeared to have recovered completely and returned to his full work; this was approximately eight months after his injury. Even at this time the recalcification of the affected bones was not complete.

I have been consulted by two other patients with this condition since seeing the one given above. In one case the disability followed a simple sprain of the ankle, while in the other it supervened on an injury to the hand that necessitated the amputation of the forefinger. In the latter case the condition is of too recent occurrence for certainty as to what will happen; but in the former the condition had been present for ten months before I

¹Read at a meeting of the Section of Orthopaedics of the New South Wales Branch of the British Medical Association on June 16, 1938.

saw the patient. She arrived with a sheaf of X ray films and a dozen or more prescriptions. She was at the stage when manipulation of the rigid foot was indicated, and four weeks after this was carried out she stated that her foot was normal again.

Pathology.

The main change in Sudeck's atrophy is confined to the bones, and consists of a progressive decalcification of those involved. Heydemann has pointed out that at least 15% of the lime salts must be removed from the bones before radiological evidence of decalcification is found, so the other symptoms of the condition will almost certainly be present before radiography reveals bone changes. The poly-articular areas are most frequently affected, but the changes may be seen in any region of the extremities. The osteoporosis is practically confined to the cancellous ends of the long bones and the bones of the carpus and tarsus. The sequence of changes is best studied radiographically, and is as follows:

1. In the early stages irregular areas of decalcification are present, and these produce a mottled appearance. It is this mottling that is so characteristic and should make the examiner suspicious of the condition. Normally the atrophy of bone produced by disuse resembles that of the second stage in Sudeck's atrophy.

2. Later, usually after several months, the mottled appearance is replaced by the so-called "glassy" atrophy; the trabeculae disappear, and a shell only represents the affected bones.

3. In the final stage, which is seen only in progressive cases, the affected bones are fused into a conglomerate mass, and calcification may be observed in the ligaments.

One case has been reported in which the condition progressed over ten years. The end-result was the disappearance of some of the bones of the foot and their replacement by a solid mass of fibrous tissue.

Fortunately, in most cases there is a tendency to recovery after the second radiographic stage has been reached.

So far no work has apparently been done on the changes in the other structures involved; in this respect I refer mainly to the nerves in the vicinity.

Causation of the Bone Changes.

The cause of these changes in the affected bones has been ascribed to many things; but the most reasonable explanation is based on the work of Leriche and Policard. These workers have shown that decalcification occurs in the presence of hyperaemia, while recalcification occurs only when the excessive blood supply is reduced to a relative anaemia of the part. This means that there is an increase in the vascularity of the bones in Sudeck's atrophy; and the probable cause of this hyperaemia is damage to one of the sensory nerves in the vicinity. Running peripherally in the sensory nerves are fibres which are protective in function, and which play a large part in the mechanism of

repair. These fibres belong to a system which has been named "nocifensor" by Lewis. Their presence can be demonstrated by stimulation of the peripheral end of a cut nerve; the result is a vasodilatation, with consequent redness of the part supplied by the nerve. It is believed that the fibres of this system travel centrally and reach the cord *via* the posterior nerve roots. In the cord they form synapses with lateral horn cells, the axones of which leave the cord with the rest of the sympathetic fibres. On this basis repair is a reflex act; but why the arc should become over-active in some cases and produce a syndrome which so closely resembles the syndrome of nerve irritation is difficult to understand. It is possible that in these cases there is some direct damage to the nocifensor fibres in one of the larger nerves, whereas normally only the nerve endings are injured.

Sudeck thought that infection played the main role in the causation of the bone changes, but Keinbock ascribed them to trophoneurosis. Cohn said they were due to the washing of lime out of the distal parts to replace lime higher up the limb, especially when a fracture was present. He maintained that the lime travelled *via* the lymphatics, and that he could demonstrate the calcium in them by means of radiology. According to him, the pain is due to the irritation of the calcium in the soft tissues. Pavlov produced bone atrophy in dogs by the continuous application of cold to the extremities. This suggests a trophic disorder and fits in with Lewis's theory of the nocifensor system. The prolonged stimulation of these protective fibres would produce hyperaemia that could be expected to affect all the structures of the abused part.

Henry Turner, of Leningrad, wrote an instructive article in 1936 on the probable causes of non-union in fractures. He emphasized the damage done to the nerves by the original injury. He pointed out that in all cases of non-union changes similar to those of Sudeck's atrophy occurred in the bones distal to the fracture. He stated that he had been successful in the treatment of non-union of fractures by the injection of alcohol (60%) into the vicinity of the painful nerves.

Treatment.

If we consider the theories of Lewis and Leriche and Policard as being the explanation of the cause of this condition, I think we should look upon the primary lesion as a traumatic neuritis, especially when we take into consideration Turner's observations. In that case rest is indicated in the early stages, as it is in the nerve irritation syndromes. If there is no response to this form of treatment, the injection of alcohol (60%) into the vicinity of the nerve involved is indicated. In some intractable cases a preganglionic section of the sympathetic fibres to the limb may be considered necessary. Logically it would be expected that sympathectomy would increase the hyperaemia; but this measure probably owes its effect to the breaking of the reflex arc.

In the literature the use of acetylcholine to relieve the symptoms is mentioned; while Cranmer recommends the intravenous injection of typhoid vaccine to stimulate the sympathetic nervous system.

In the later stages, when the condition has subsided, there is generally some residual stiffness of the affected joints. Manipulation under an anæsthetic will be necessary in such instances; but in a case as mild as the one I have described the movements are readily restored by active use. If the condition has progressed to the third stage, in which fusion of the tarsus or carpus has occurred, there is practically nothing that can be done to restore the lost movement. In the feet some static disturbance is left in every case, and the appropriate treatment is needed, be it an alteration to the footwear or the ordering of a suitable in-sole.

The Importance of Sudeck's Atrophy.

Sudeck's atrophy is nearly always labelled as one of several other conditions. Malingering is the diagnosis in the majority of the milder cases, especially if the unfortunate individual happens to be a worker receiving compensation. This mistake will not be made if the condition is kept in mind. Tuberculosis can cause difficulty in diagnosis if an X ray examination is not made until late in a progressive case; but in tuberculous arthritis the vasomotor changes are not present. Sometimes gonorrhœal arthritis is suspected. A history of urethritis is very helpful in the diagnosis of this lesion, as also is the fact that the pain is so severe that the administration of morphine is necessary. In rheumatoid arthritis there is no discoloration of the overlying skin, as there is in Sudeck's atrophy. Moreover, it is generally polyarticular.

A MISCELLANY.

By LAURENCE DUNCAN,
Melbourne.

PIERCING the oblivion of time there emerges the figure of many a doctor who in some way in his day made history.

George Birkbeck (1776-1841), M.D. (Edinburgh), was the founder of mechanics' institutes. In 1800 he inaugurated for the working men in Glasgow a cheap series of lectures on science, which in 1823 developed into the Glasgow Mechanics' Institute. Later, practising in London, he established a similar institution, and these two foundations in Glasgow and London initiated a movement which became exceedingly popular throughout the whole country.

Men like Dr. Samuel Gridley Howe, in America, and Dr. Thomas Rhodes Armitage, in England, will always be remembered for their pioneer work in helping the blind to useful citizenship.

The work of Dr. Thomas Percival, Dr. Joseph Toynbee and Dr. Barnardo entitles them to rank

not least among the British Empire builders. Percival was the earliest advocate for the legislative control of the employment of children in factories and mines. Toynbee, a distinguished aural surgeon of London, helped to found the metropolitan association for improving the dwellings of the working people, started a fund for the provision of food for the indigent, and in many other ways worked to promote the physical and intellectual improvement of the poor. The Barnardo Homes, since their inauguration in 1866, have rescued more than 110,000 destitute children, of whom more than 30,000 emigrated to Canada and Australia with wonderful success.

A recent philanthropist on a large scale was the American, Dr. James Eads How (1874-1930), known as "The Hobo Millionaire" or "King of Tramps". A member of a wealthy American family living at St. Louis, How graduated in medicine at Harvard University, but abandoned practice in order to study the problem of the homeless worker. He used his wealth to establish the International Brotherhood Welfare Association, with the object of introducing cooperation among the tramps or hoboes (as the Americans call them) and improving their conditions. He published a monthly magazine, *The Hobo News*, giving information about the prospects of work in different States, and discussing topics of interest to them. He established "tramp colleges" throughout the country, where men out of work could receive education, and he erected lodging houses in the cities, where tramps could always be sure of rest, a bed, a meal and advice. How defined the tramp "not as a ne'er-do-well or waster, but as a travelling workman, whose roving spirit rebelled at confinement".

A doctor's (Sir Hans Sloan's) collection of objects of natural history, pictures, engravings, manuscripts *et cetera*, purchased by an act of parliament in 1753, was the foundation of the British Museum. Another doctor, Sir W. J. Erasmus Wilson, was instrumental (he gave £10,000) in bringing Cleopatra's Needle to London Embankment.

From the Rosetta Stone Dr. Thomas Young was able to supply the key to the interpretation of the ancient Egyptian hieroglyphic writing, which up to that time had baffled all Egyptian students.

Two useful almanacs were initiated by doctors. "Whitaker's Almanack" was founded in 1868 by Dr. J. Whitaker, who edited it until his death in 1895. "Moore's Almanac" was founded by Dr. Francis Moore, a physician who practised at Westminster in the latter part of the seventeenth century.

Some two hundred years ago, Joseph Fry, a doctor of medicine at Bristol, embarked on a number of business ventures, including a small cocoa and chocolate shop, which has expanded into the gigantic business of J. S. Fry and Sons.

Sir Henry Lunn graduated in medicine at Dublin and was a medical missionary in India before he founded the travel agency that bears his name.

Two medical men, Sir Henry Thompson and Dr. William Kitchener, incidentally won fame as high authorities on gastronomics.¹ William Kitchener (1775-1827) obtained the degree of Bachelor of Medicine at the University of Glasgow, but, being independent of his profession, devoted himself to music and science, and published a number of miscellaneous works. Believing that the proper preparation of food was a great factor in preserving health, he studied the art of cooking in his own house and became something of a culinary expert. His dinners, to which only a few guests (no more than six or eight) were invited by printed invitations, were famous. The guest had to answer the invitation within twenty-four hours. He had to be ready to sit down at 7.30 p.m., and no guest was admitted after the hour fixed. Lastly, he had to leave at 11 o'clock or he was not asked again. Though somewhat eccentric, Kitchener was an admirable host; the dishes he prepared were appetizing, and invitations to his dinners were much sought after. His reputation as an epicure was further enhanced by the publication in 1817 of a work entitled "*Apicius Redivivus*, or the Cook's Oracle, being Six Hundred Receipts, the Result of Actual Experiments Instituted in the Kitchen of a Physician, comprising a Culinary Code for the Rational Epicure".

Sir Henry Thompson (1820-1904) was a very distinguished surgeon. He had other claims to distinction: as a painter of pictures which hung in the Royal Academy, and as the writer of two novels, "All But" and "Charlie Kingston's Aunt". After his retirement he made himself a further reputation, as the host of dinner parties known as the "Octaves", at which the most brilliant men in England were brought together. Sir Henry considered that eight was the largest number permitting of any general conversation, so eight men representative of literature, science, art, music, law, medicine and politics were invited to each dinner. They sat down to dine at eight o'clock; at the top of the menu card was an octave of music; and there were eight courses at the dinner. Thompson was a delightful host and an authority on gastronomics. His book "Food and Feeding" went through many editions.

In 1888, a doctor, Sir Morell Mackenzie, was the cause of some ill feeling between Germany and England. Mackenzie was recognized as an authority on the diseases of the larynx. As early as 1863 he had been awarded the Jacksonian Prize of the Royal College of Surgeons for an essay on "The Pathology and Treatment of Diseases of the Larynx". The Crown Prince Frederick of Germany, early in 1887, became hoarse, and by May 18 the German doctors attending him unanimously agreed that there was a cancerous growth, and advised laryngotomy and its extirpation. Mackenzie was

summoned, the Germans said, by Queen Victoria. He arrived on May 20 and forbade operation till the growth had been proved by microscopic examination to be malignant. On two occasions Mackenzie removed a small piece of tissue and submitted it to Virchow for microscopic examination. Virchow's report favoured a non-cancerous diagnosis, and Mackenzie gave his opinion that the growth was of a non-malignant polypous or fibromatous nature. His opinion was joyfully received by Royalty. He was decorated with the Grand Cross of the Hohenzollern Order and knighted for his services. The months went by, the growth made steady progress, the cord became fixed; but Mackenzie persisted in his optimistic opinion. As late as February 12, 1888, he stated in an official report to the Emperor William I that "Medical science did not permit him to affirm that any other disease was present than chronic interstitial inflammation of the larynx combined with perichondritis". The Crown Prince became Emperor on March 9, 1888, and died on June 15, and the now exiled Kaiser came to the throne of Germany. Mackenzie did not take his failure in good part; his relations with the German doctors had been disfigured by mutual distrust and pettiness. The Germans in a pamphlet issued from the Imperial Press at Berlin charged Morell Mackenzie with malpraxis. He rushed into verbal polemics, and an unseemly wrangling, ill-befitting a scientific controversy, ensued between Mackenzie and the German medical world.

Not without some historical interest is the career of Dr. James Barry (1795-1865), a woman who passed nearly fifty years of her life as a soldier and a man, rising to the rank of Inspector-General of the British Army Medical Service. As a young woman she was embittered by the desertion of her lover after the birth of a child, and decided that for the rest of her life she would masquerade as a man. Graduating with credit at the Edinburgh Medical School, she joined the army medical service, and for some years was attached to the garrison at Malta. She was then transferred to Capetown, where a distant relative, Lord Charles Somerset, was Governor of the colony. She was regarded as eccentric and somewhat effeminate by her brother officers; but apparently none suspected her sex. She fought a duel with the Governor's aide-de-camp, and her fiery temper and quarrelsome disposition commanded respect. The Governor described Barry as "the most skilful of physicians, and the most wayward of men"; on more than one occasion he shielded her from the consequences of gross breaches of discipline. In 1851 she was appointed deputy-inspector of hospitals, and seven years later inspector-general. In 1859 she retired on half pay and settled down in London, where she died at the age of seventy. Only after her death was it officially known that Inspector-General Barry was a woman.

In Italy, Dr. Maria Montessori, quite apart from the distinction of being the first woman in Italy to graduate in medicine, which she did in 1894, has done very valuable work in education. Her ideas

¹ Lest one should say there is no connexion between gastronomics and history, let me remind him:

Digestion, much like Love and Wine, no trifling will brook.
His cook ones spoiled the dinner of an Emperor of men:
The dinner spoiled the temper of His Majesty, and then
The Emperor made history—and no one blamed the cook.

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ILLUSTRATIONS TO THE ARTICLE BY DR. LEONARD B. COX.

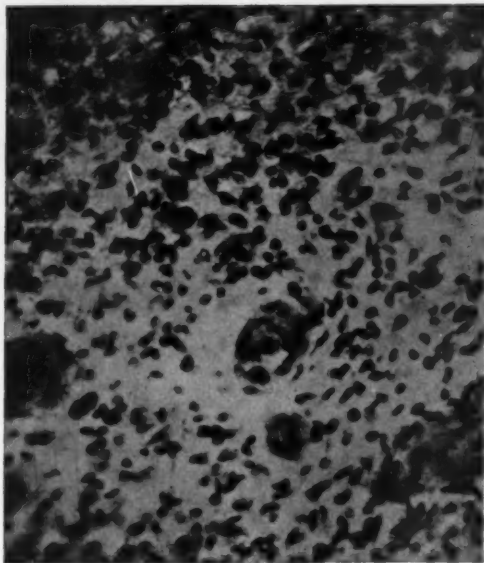


FIGURE III.

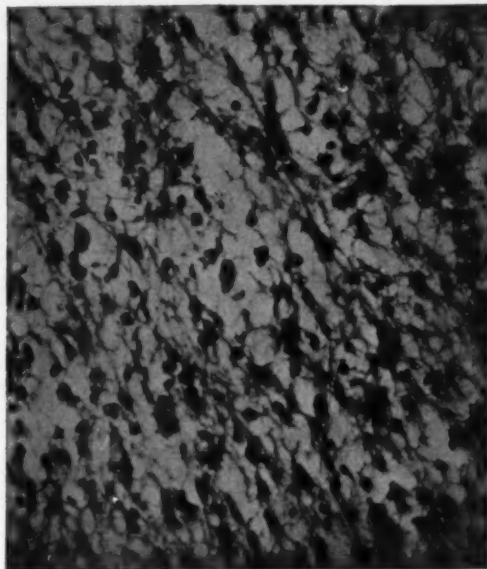


FIGURE IV.

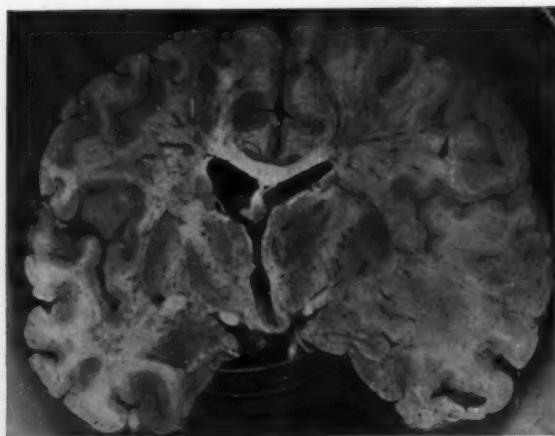


FIGURE VI.

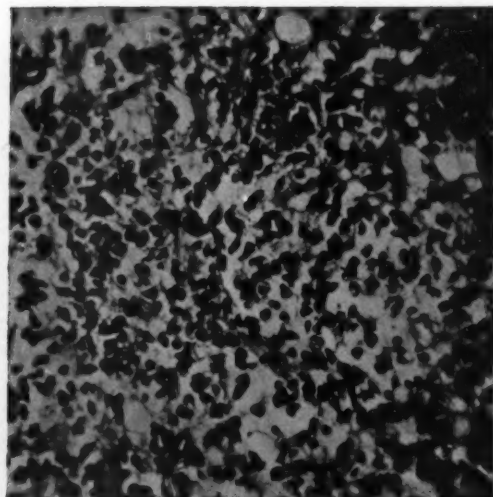


FIGURE VII.

ILLUSTRATIONS TO THE ARTICLE BY DR. NORMAN LITTLE.



FIGURE I.

This shows the radiological appearance of the right wrist of a patient six weeks after injury, when he had swelling of the wrist, hand and fingers, stiffness of these parts, and vasomotor changes in the same area. The lime content of the bones appears normal. Note the congenital fusion of the semilunar and triquetrum.



FIGURE II.

This skiagram was taken fourteen weeks after injury, and shows very well the changes that occur in Sudeck's atrophy. Note the mottled appearance of the decalcified areas, and the fact that the latter are in the cancellous ends of the long bones, the cancellous bones of the carpus and the cancellous bones of the fingers.



FIGURE III.

This skiagram was taken eight weeks after Figure II; it shows the next stage of the condition, when the atrophy resembles that of disuse and is best described as "glassy". In this case this stage has been reached sooner than usual.



FIGURE IV.

This skiagram was taken in June, 1935, three months after the patient's return to work. Recalcification is not complete, but he had been free from symptoms for four months.



set forth in "The Montessori System" have been translated into many languages.

Sweden's system of liquor control is named after its originator, Dr. Ivan Bratt. Under the Bratt system the sale and distribution of alcoholic liquor are carried on by private companies under strict government control, and sales are regulated by the issue of a control or permit book to every person entitled to purchase; such permit may be withdrawn in cases of abuse.

Hypnotism, mesmerism and phrenology all owe their origin to doctors. Hypnotism, or Braidism as it is sometimes called, perpetuates the name and fame of a Scotsman, James Braid (1795-1860), a surgeon of repute, who practised in Manchester. Braid was not only the first to describe hypnotism, but he also made use of it in order to perform painless surgical operations. Franz Anton Mesmer (1734-1815) was a German-Swiss physician, who practised at first in Vienna, where he gained his degree of Doctor of Medicine by a thesis on "The Influence of the Planets upon the Human Body". Later he moved to Paris, where his charlatanry became so flagrant that finally he was discredited. The founder of phrenology, Dr. Franz Joseph Gall (1758-1828), attracted world-wide interest in his pseudo-science, now justly regarded with scepticism.

The development of the scientific study of fingerprints was largely the work of medical men. Nehemiah Grew, M.D. (Leyden), in 1684, described the ridge patterns of the human hand, and Edward Tyson, M.D. (Cambridge), in 1699, noted similar ones on the fingers of the chimpanzee. In 1823, Purkinje the physiologist, after whom the Purkinje cells of the cerebellar cortex are named, in a paper read before the University of Breslau, described nine standard types of impression, and advocated a system of classification. In 1880, Dr. Henry Faulds, a Glasgow graduate, first published a method of finger-print identification as a means of tracing criminals. In support of his contention he wrote:

... on the skin furrows of the hand, when bloody marks or impressions on clay, glass, etc., exist they may lead to the scientific identification of criminals. Already I have had experience in two such cases and found useful evidence from these marks. In one case greasy finger-marks revealed who had been drinking some rectified spirits. The pattern was unique and fortunately I had previously obtained a copy of it. They agreed with microscopic fidelity. In another case sooty finger-marks of a person climbing a white wall were of great use as negative evidence.

The inventor of modern shorthand was Dr. Timothy Bright (1551-1615), who graduated in medicine at Cambridge in 1574, and was for some years physician to Saint Bartholomew's Hospital. In 1588 he published his treatise on shorthand, the first English publication on the subject. In 1742 Dr. John Byrom obtained by act of parliament a licence to teach the art for payment, his fee being five guineas for each pupil.

The first projector of fire insurance in Britain was Nicholas Barbon (died 1698), M.D. (Utrecht),

Fellow of the College of Physicians of London, who, after the Great Fire of 1666, became one of the principal builders in the city of London.

William George Meade, a physician who practised at Tunbridge Wells, lived to the extraordinary age of 148 years and 9 months. He died on November 4, 1652, and left £5 for ever to the poor.

Sports and games of every kind have had devotees from the ranks of medicine. As long as cricket is played the name of Dr. W. G. Grace (1848-1915) will be remembered. Grace graduated M.R.C.S. (England) and L.R.C.P. (Edinburgh) in 1879; at the end of the same year he commenced practice in Bristol, where he remained till his retirement from practice in 1899. For nearly forty years Grace played in first-class cricket, and today his name is still the symbol of cricket wherever it is played. His two brothers, Dr. E. M. Grace and Dr. G. F. Grace, also played for England. Dr. H. J. H. Scott was a member of the Australian Eleven in 1884, and captain of the team in 1886. Dr. J. E. Barrett, Dr. R. Pope, Dr. A. E. V. Hartkopf, Dr. R. B. Minnett, Dr. O. S. Nothling and Dr. R. L. Park have all represented Australia in test cricket.

In tennis there have been men of international fame, like Dr. Pim and Dr. Arthur O'Hara Wood.

Dr. A. J. T. Allan won the British amateur golf championship in 1897, Dr. William Tweddell in 1927. Dr. R. H. Bettington was amateur golf champion of Australia in 1932.

In rifle shooting, Dr. Cecil Heygate Vernon won the King's Prize at Bisley in 1927.

Dr. H. C. Disher stroked the famous Australian crew which won the King's Cup at Henley-on-Thames just after the War.

A surgeon, the late Sir Herbert Maitland, of Sydney, established the world's record for casting a trout fly a distance of forty-two yards.

Dr. A. E. Porritt represented England at the Olympic Games in 1926 and reached the final of the 100 metres race. Dr. Jack Lovelock, at the Olympic Games in Berlin in 1934, won the 1,500 metres event in world's record time. Dr. Patrick O'Callaghan, of Ireland, won the hammer-throwing championship at the Olympic Games in 1928 with a record throw, and repeated his success at the Games in 1932. The present champion of Scotland over 100 yards and 220 yards, and the holder of the 220 yards championship of England, is Dr. Robin I. Murdoch, a medical graduate of Glasgow University.

Two qualified medical men, Dr. Roller and Dr. Sarpolis, adopted professional wrestling and were men of note in the wrestling ring.

J. H. Walsh, F.R.C.S. (1810-1888), was an acknowledged authority on sports of all kinds, and under the *nom-de-plume* of "Stonehenge" wrote a number of works on British sport.

One of the chief authorities on whist was Henry Jones, M.R.C.S., L.S.A. (1831-1899), who, under the name of "Cavendish", codified the laws of the game and became its recognized expounder.

The last fifty years have seen many distinctions conferred upon medical men. The first medical Lord Mayor of London was Sir Thomas Crosby, in 1911, and, in 1913, Dr. Robert Bridges became the first medical Poet Laureate. In 1897 Lister became the first medical peer; in 1936 Lord Dawson of Penn became the first viscount-doctor. Probably the first member of a royal family to practise medicine was Duke Carl Theodore, the father of Queen Elizabeth of the Belgians. He obtained his medical degree at the Universities of Munich, Vienna and Zurich, only after conscientious toil, and subsequently practised as an oculist.

And now, as I draw to an end of this discursive chronicle of medical men and their various achievements, I am conscious of many omissions; it is of necessity curtailed lest it proceed to sesquipedalian proportions. As historians, essayists, dramatists, novelists and poets also, medical men have won distinction. To attempt to portray them here would be to crowd further an already crowded picture. Each requires a separate canvas.

Even at the foot of Mount Parnassus there lived Autolycus, famed as a thief and a swindler. It is scarcely to be expected that into the ranks of medicine there would not enter a few workers of iniquity. In the past century there have been half a dozen doctor criminals, who have greatly helped the sales of the sensational newspapers: miscreants such as Palmer, Pritchard, Lamson, Cream and Crippen. The last-named was instrumental in causing great interest in wireless telegraphy while yet in its infancy. In 1910, as the result of a wireless message sent from the vessel in which he was crossing the Atlantic, Crippen was arrested for murder and brought to trial. It was the first practical demonstration of the value of wireless.

Thus ends my story, an unvarnished tale of well-spent lives and great accomplishments. If in some small way it helps to cherish our traditions, to stimulate and strengthen the common bond of our profession, my purpose is accomplished.

Reports of Cases.

A CASE OF ABDOMINAL PREGNANCY WITH A FULL-TIME LIVING CHILD.

By I. C. HAINS,
Government Medical Officer, Bundaberg,
Queensland.

Mrs. J.W., aged thirty-three years, a strong, wiry type of woman, consulted me on May 12, 1938. She gave a history of a five and a half months' pregnancy, and also of recent colicky generalised abdominal pains. She had had two previous abdominal operations. She had been operated on thirteen years earlier by Dr. Luddy at Mount Morgan Hospital. Her appendix had been removed. The operation had been performed abdominally for uterine suspension. Two years later she had been operated on for a left ectopic gestation. At the time of that operation she was seven weeks pregnant. The left Fallopian tube and ovary had been removed by the late Dr. O'Hara at Mount Morgan.

She had usually been subject to pains across the lower part of the abdomen at her menstrual periods; the right side was always the worse. She had one child, a male, aged fifteen years. She had consulted Dr. Miles, of Mount Morgan, who had advised her to go to a large hospital town when she was confined, as she was leaving Mount Morgan.

Since I removed the child abdominally I have communicated with Dr. Miles, who has given me these notes on the patient:

September 15, 1937: Cured for dysmenorrhœa.

February 11, 1938: Last unwell on November 28, 1937. Severe pain on and off since; trace of blood *per vaginam*. Pregnant three months.

March 19, 1938: Acute abdominal pain for one day. Now four months pregnant. Abdomen a little rigid. No discharge *per vaginam*.

Per vaginam—uterus enlarged and over to the left. Right fornix tender.

Diagnosis: Probable ruptured ectopic.

Dr. Miles, however, did not operate, as the patient improved, and he thought he would leave well alone. That history I have obtained only since I operated on her. I saw the patient periodically subsequently. She complained of abdominal colicky pains, with pain in the right lower limb.

The abdominal swelling increased; foetal movements were active. *Per vaginam*, I found the cervix like that of a normal pregnancy, and the uterus filling the pelvis. The foetus was palpable, and a solid uterus-like swelling was rising in the abdomen.

Late on September 11, 1938, the patient was admitted to the Lady Chelmsford Hospital, an obstetric hospital connected with the Bundaberg General Hospital. She had abdominal pain and pain in the right lower limb. The foetal heart sounds were normal and were heard just below and to the right of the umbilicus. I examined the abdomen radiologically and found the foetus lying across the abdomen. The head was to the left of the umbilical level and the lower limbs were dangling above the pelvis to the right. *Per vaginam*, the os appeared large and soft, and was not dilating.



FIGURE I.
The infant, at the age of nine weeks, with the mother.

I felt one foot of the foetus in the pelvis behind the os, and a little high, and I decided to open the abdomen there and then, as the patient showed signs of peritoneal irritation—vomiting and some shock. On September 12, 1938, I performed laparotomy in the Bundaberg General Hospital; Dr. D. Barry gave an open ether anaesthetic

and Dr. Day was present. On cutting quickly through the abdominal wall I came on a thin broad film of peritoneum, which was lying right across the abdomen. Below were a mass and what looked like the top of the bladder (it was placenta), and I cut a little cautiously at the lower end of the wound.

I divided the thin peritoneal broad band, and found a dull, cream-coloured, leathery sac, with a wall about 0.3 centimetre (one-eighth of an inch) in thickness. I lifted the fetus in this sac out of the abdomen, cut through the sac, which was the combined amnion and chorion, and drew out a female child, which weighed 3.2 kilograms (seven pounds twelve ounces).

Just prior to this the mother received a considerable amount of "Carbogen". I consider the administration of this gas important in Caesarean section, to lighten the anaesthesia. The child cried loudly and was removed.

I found a huge placenta, twice the normal size. It rose from a broad band, like the pedicle of some ovarian cysts, from the top of the right broad ligament, and had a huge blood supply. It had not a great deal of intraabdominal attachment. It was attached to the peritoneal band that I have described. I removed this band. It was also attached to the back of the right broad ligament.

The uterus was the size of a three and a half months' pregnancy, and was empty. The placenta lay on it, and the contiguous placenta rose from it into the abdomen and had precluded ready palpation of the fetus at a level below the umbilicus.

I carefully lifted out all membranes from the abdomen, and noted the right Fallopian tube stretching across the sacs at the top edge of the placenta, below the umbilicus. The left Fallopian tube and ovary were absent, and the peritoneal band mentioned above arose in that neighbourhood. The left Fallopian tube was about 10.0 centimetres (four inches) long. The fetus had lain wholly and only in the chorio-amniotic sac. There was considerable haemorrhage from what might be termed a plexus of veins on the posterior surface of the right broad ligament. I used gauze 7.5 centimetres (three inches) wide and about three or four feet long for packing; the end was brought out through the lower end of the wound.

This gauze I withdrew at the end of thirty-six hours. The child's right lower limb was turned in at the hip; but movement and massage have helped to produce a normal state. The cranium also was pushed a little to the left, with inclination of the whole head to the right. Massage of the right side of the neck has been of value, and the child is now normal.

The child's birth was registered at the office of the Registrar of Births at Bundaberg on September 19, 1938.

During the puerperium there was a brownish discharge *per vaginam* for some days, and on the seventh day a cast of the uterus was expelled.

The child has been breast fed since birth. The patient was discharged from hospital on October 3, 1938, and is now in excellent health.

Information that I received subsequently is here recorded.

The patient's sister, Mrs. W., was operated on by me early in 1938, for a right-sided ectopic pregnancy. It was an early pregnancy. The right Fallopian tube I found intact and full of blood clot. There was a little free blood in the pelvis.

I obtained the following information about the patient's mother from Mr. J. R. McL., her widower. He lives at Bundaberg and was married in 1898. His wife had eleven children, seven of whom lived. Three died at the age of three months; one just breathed. Her last two children were removed by Caesarean section by Dr. V. Voss, at the Women's Hospital, Rockhampton. She died three days after the second operation.

I have been unable to find details of these operations, as there has been an alteration in the control of this hospital. Mr. McL., however, informs me that the pregnancies were in the uterus and not in the abdomen.

I conclude that she may have had a fibroid growth obstructing delivery.

The placenta removed by me from the patient in this case is in the museum of the University of Queensland. One of its chief characteristics is that it has amniotic membrane on one surface and chorionic membrane on the other. It is also, as I have pointed out, about twice the normal size.

Addendum.

The child on January 16, 1939, is growing and is normal physically in all respects, and intelligent.

Reviews.

MENINGIOMATA.

THE book on the meningioma by Cushing and Eisenhardt should be in every neurologist's library. Cushing's life-work provides an illustration of the appropriateness of Jane Ellice Hopkins's rather limited definition of genius as "an infinite capacity for taking pains". There are many examples of the achievement of this "highly strung sexagenarian", mature and perfect craftsman that he is. The early operations upon suprasellar meningioma were nearly all tragedies, but later results suggest that few meningioma have a better prognosis, and few promise to be more easily recognized when of small size.

Nine major pathological types of meningioma are described and their origin is ascribed to one mesothelial mother cell, the meningocyte, of disputed epiblastic or mesoblastic origin. Analysis of the scrupulously recorded minutiae of each case leads to the construction of clinical pictures for each situation of growth, and even for different pathological types. Of pterional meningioma "*en plaque*" the authors write: "a composite of the anamnesis of the nineteen patients would disclose a woman nearing middle age who for a long period has observed a slowly increasing unilateral exophthalmos with ultimate impairment of the vision and a palpable swelling in the temporal region". There is cranial hyperostosis, but the brain is little affected by the small intradural extension. Global tumours growing in the same situation, on the other hand, may remain unsuspected until symptoms of increased intracranial pressure develop.

There is much philosophy in the book; it is dedicated to co-workers and patients, many of whom are rescued from the usual anonymity of medical literature. Mistakes are part of these clinical records, but the lessons learned have been of great value to Cushing and his world-wide school of assistants. The value of this dissemination of knowledge scarcely needs emphasizing. "It is one thing for a surgeon to summarize his past experiences with a group of cases and quite another thing when months and years elapse between operations upon tumours of a given kind for him to carry from one case to the next a slowly developing conception of the lesion and its principal hazards."

Although his "eventful period of training under an inspired master", Sherrington, must have greatly influenced him, Cushing is not profoundly concerned with physiological details. The text is an affirmation of the realities of his calling. He takes what is of practical value to his patients. When results are better than his own, he gives the admiration of one who knows the difficulties.

Ventriculography has been little used. In review of radiographs it was possible to determine the site of almost every meningioma over the convexity—but that is easier in retrospect. Shift in the position of silver clips as well as clinical examination is advocated in the detection of regrowth of the tumour.

Much labour has gone into the preparation of the book. Historical annotations and references to the literature amplify each chapter. Of 313 patients only two remained

¹ "Meningiomas: Their Classification, Regional Behaviour, Life History and Surgical End Results", by H. Cushing, M.D., with the collaboration of L. Eisenhardt, M.D.; 1938. Baltimore: C. C. Thomas. Crown 4to, pp. 799, with numerous illustrations. Price: \$15.00 net.

untraced at the time of writing. The illustrations are excellent, and for the most part useful. Some of the text might with advantage have been abbreviated.

In the last five years of Cushing's surgical work there were 156 operations upon 118 meningiomas with a case mortality of 11.8% and an operative mortality of 8.9%. The introduction of electrosurgical methods was believed to be responsible for this low rate. Another twenty-five years will be necessary to determine whether "continuances" of growth will also be lessened.

ELEMENTARY ANATOMY AND PHYSIOLOGY.

"This book", according to the foreword of Whillie's "Elementary Anatomy and Physiology", "provides the right approach to the study of human anatomy, and on that account it is equally suitable for medical students, nurses, and any others who propose to study the subject." The writer of the foreword (Professor T. B. Johnston, of Guy's Hospital) interprets the word "elementary" as meaning "introductory"; but when we read the actual work we find it difficult to ascertain the author's precise meaning in the use of the word. For when we turn to its pages, expecting to find something of the spirit of John Hilton who was also of Guy's, the exposition of anatomy and physiology becomes more and more tedious and commonplace.

The first four chapters deal with the subjects of histology, bones, joints and muscles. There is an attempt to include a description of every bone, joint and muscle, and the subject matter is reduced to the worst type of catechism series. Where the author might have used a whole chapter to contrast the shoulder joint with the hip joint, and in this way might have shown how joints are adapted to their various uses (making his book a valuable introduction to the more detailed text-books), he appears only to have attempted to make an inadequate *précis* of an enormous subject. The description of the *tibialis posterior* muscle is an example of the author's description of the muscles generally: "The *tibialis posterior* (posterior tibial muscle) is another inventor of the foot." Practically every muscle is dealt with in the same way. It is difficult to see what value such detached statements could have for medical students or nurses. The *tibialis posterior* is worthy of more respect than to be thus summarily dismissed. If the whole chapter on muscle had been devoted to its description in such a way as to demonstrate the beautiful economy of the body in the relationship of structure to function, the student would have had a picture of its action in helping to keep the ankle joint maintained and in supporting the arches of the foot; he would have seen how the reflex action of muscle comes to the aid of strained ligaments; and, further, with such an introduction to the anatomy of muscle, the search for the illustration of principles in every muscle would be stimulated. Interspersed with such scraps of anatomy throughout the book are found crumbs of physiology of which perhaps the most striking example is the description of proteins. "Proteins are used mainly for the rebuilding of the protoplasm of cells which has become broken down in the performance of work. Some of the proteins are essential for growth. Proteins contain nitrogen." The last sentence might have profound chemical meaning, but it would certainly confuse nurses if they were aware that nitrogen was also in the air.

But not only does the book contain ill-assorted scraps of anatomy and physiology; it also contains many paragraphs entitled "practical considerations". One example will suffice: "In the nursing of cases of peritonitis the patient should be propped up in bed so that if any localisation of the condition occur the abscess will form in the pelvis, where it is accessible, and not below the

diaphragm, where it is difficult to reach." The anatomy rooms are unsuitable for the teaching of surgery and the author has unwittingly demonstrated this.

The book is well printed and the diagrams are simple and clear.

GAS ANALGESIA.

Dr. Minnitt, in his small book on gas and air analgesia, had presented his material and arguments in a more systematic manner, the object of demonstrating the excellence of his method might have been more nearly achieved. As it stands there is a good deal of obscurity and repetition, while the inclusion of various non-essentials is apt to be confusing. The chief consideration is the application of the method to midwifery, but one chapter deals with its questionable use in minor surgery and dentistry. It must be acknowledged, however, that Dr. Minnitt is opposed to any attempt to attain full anaesthesia with his apparatus.

The method has one grave disadvantage, which no amount of enthusiasm can overcome. However it is employed, some oxygen deficiency is inevitable, and if the mask is held on the patient's face for prolonged periods, as the text recommends for delivery and minor surgical procedures, grave suboxygenation must occur. The mixture inhaled from the machine consists of nitrous oxide and air in the proportions of 45% and 55% respectively. Thus about 44% of inert nitrogen and only 11% of oxygen are available. Obviously any prolonged exposure to such an atmosphere cannot fail to have deleterious effects on both mother and child, such as petechial hemorrhages in various organs, and there is also a risk of irreparable damage to the cerebral cortex. No reliance is to be placed on the quoted figures, which purport to demonstrate a high oxygen content for foetal as compared with maternal blood during gas and air analgesia. In the first place the series is too small and contains wide variations; in the second place, presumably maternal venous and foetal "arterial" blood are being compared; thirdly, the average figures are not favourable; and, finally, in most cases a serious depletion of arterial oxygen content is indicated. It is quite possible that the concurrent asphyxia is a major factor in the production of the analgesia.

Notwithstanding this, the method has a place in domiciliary midwifery, especially when no doctor is in attendance. The apparatus is portable and almost fool-proof, the agent is non-inflammable, and reasonable economy is possible. Its inadequacy in difficult and complicated labour is rather an advantage in that this encourages the seeking of help, a point well stressed in the book. Apart from instructional requirements, use of gas and air analgesia in hospitals does not seem to be advantageous.

Illustrations of several types of apparatus, notably the Walton-Minnitt and the Queen Charlotte's models, are included, and there is a very good synopsis of a course of lectures. Stress is laid on the relevant Central Midwives Board Regulations, which require a definite standard of proficiency on the part of the midwife, a preliminary medical examination and certification of the patient, and the presence of a specified third person at the administration. The main contraindications to the use of the method, cardiac, respiratory and renal inefficiency, are discussed, and the details of technique are well set out, especially those relating to the proper preliminary instruction of the patient. Objection might be taken to the inclusion of laudatory testimonials, while a more searching examination of the physiological considerations involved would have been desirable. On the whole, Dr. Minnitt has shown that his method represents an advance and that, provided its limitations are recognized, it has a useful place in the relief of the pains of labour.

¹ "Elementary Anatomy and Physiology", by J. Whillie, M.D., M.S., F.R.C.S., with a foreword by T. B. Johnston, M.D., Ch.B., 1933. London: J. and A. Churchill Limited. Royal 8vo, pp. 352, with illustrations. Price: 12s. 6d. net.

² "Gas and Air Analgesia", by R. J. Minnitt, M.D.: 1933. London: Baillière, Tindall and Cox. Crown 8vo, pp. 92, with illustrations. Price: 2s. net.

The Medical Journal of Australia

SATURDAY, FEBRUARY 18, 1939.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

"ULERON" IN THE TREATMENT OF GONORRHOEA.

THAT a great deal of the success attainable today in the treatment of deficiencies, disorders and infections of the human body is due to the patient research of the manufacturing chemical houses is perhaps not recognized by the average medical practitioner, who sometimes feels irritated at the attentions and importunities of the detailer, as the traveller from these houses is called. The busy practitioner, possibly with justifiable excuse, looks askance at the bundles of literature and perhaps at the trade journals left in his letter box. Very often he does not read these effusions; but when he hears from his medical neighbour that the new preparation recently issued by such-and-such a firm is really effective in the treatment of this or that disease, he searches for what he has cast away and, if he is not careful, becomes too eager to try the new remedy without having the proper indications for its use. When, therefore, what is almost a specific in the treatment of gonorrhœa appears in

the form of "Uleron", it is fitting that reference should be made to it in these columns.

The success which attended the use of sulphanilamide in the treatment of streptococcal infections not unnaturally raised hopes that it would be effective in the treatment of gonorrhœa. Here, it seemed, was an infection, florid, ubiquitous and insistent, eminently suited to such a potent drug. Results, however, were somewhat disappointing; successes were not numerous, and those that were obtained followed as a rule when the drug had been given over a long period of time. It is interesting in this regard to note that Grütz laid down certain requirements that would have to be met by a drug if it was to be regarded as a bactericidal agent suitable for use in acute gonorrhœa. In the first place he held that the drug should reach the lumina of the glands and urinary canals, and that it should in these situations either kill the organisms or prevent their growth. He insisted that when such a drug was being investigated all other methods of treatment, such as irrigations and injections, should be abandoned. He also stated that the action of the drug should be manifest without undue delay. When sulphanilamide was proved unsuitable for use in gonorrhœa, workers of the German firm I. G. Farbenindustrie continued their investigations into the "Prontosil" series of drugs, and eventually a disulphanilamide, known on the continent of Europe as "Disseptal" and in England as "Uleron", was forthcoming. Used properly, "Uleron" appears to fulfil the requirements stated by Grütz. It should be stated at this point that "Uleron" is effective, not only in gonorrhœa, but also in staphylococcal infections; the success attained with it in the treatment of the former condition may blind the practitioner to the success that may follow its use in the latter. The manufacturers of this drug claim that it has a specific chemotherapeutic effect. They state that its complete action is, like that of the "Prontosil" compounds, demonstrated only in connexion with the living body or its cells—its action is not that of a simple bactericidal or disinfecting agent. It is notoriously difficult to infect animals with gonorrhœa, and it has been difficult to

demonstrate the action of "Uleron" in animals. It has been shown, however, that when gonococci are injected into the peritoneal cavity of animals they disappear rapidly when the animals are given "Uleron" by mouth.

When "Uleron" is given to a patient with gonorrhœa it is given in a series of short courses. For three or four days specified doses are given by mouth; this is followed by a pause or rest period of at least six days; sometimes a second course has to be given. Grütz has reported that with no other treatment than the oral administration of tablets, gonococci have disappeared in most cases in one to three days, occasionally after four to five days. Several observers have stated that the best results are obtained if the infection has lasted for some days before the exhibition of the drug. On this account it has been suggested that antibodies missing during the acute stage may be supplied by the administration of antitoxin either before or simultaneously with the drug. It is to be hoped that Australian practitioners will record the results obtained by them in the treatment of patients both in the early and late stages of their infections. Reports in the literature show that great care must be taken in the dosage and in the length both of the courses of treatment and of the intervals between courses. If this is not done unsuitable sequelæ are likely to arise. Again in this regard the experience of Australian practitioners should be recorded.

Finally it must be emphasized that "Uleron" is a drug for curative purposes only. According to verbal reports from Germany it has been used by prostitutes as a prophylactic; nothing could be more undesirable or more dangerous. Fortunately, as far as can be gathered, the drug will be unobtainable in the several Australian States except on the prescription of a medical practitioner. With such a powerful agent as this the greatest care and control are necessary, first of all so that no harm will follow its injudicious use, and secondly, so that a useful therapeutic agent will not be brought into disrepute.

Current Comment.

THE ACTION OF DIGITALIS.

So much valuable research work is now being published on familiar subjects that an aspiring researcher might well be advised to choose a well-worn path for his adventures in clinical investigation. Digitalis is a case in point. Its value was first recognized empirically; later it was found that certain cases were *par excellence* suited for its exhibition, notably the "*delirium cordis*" soon to be docketed as auricular fibrillation with cardiac failure. The intensive study of the irregularities of the heart led to further inquiry, and the old prescribing reflex not yet completely inhibited of giving digitalis in all cases of heart disease became a less prominent phenomenon among physicians. But during recent years cardiological study has received a great impetus from two sources, other than the obvious influence of the mechanized clinical investigation of circulatory disease in ward and consulting room. These are the accurate standardization of digitalis and its glucosides and the application of laboratory tests such as the estimation of circulation times and the cardiac output to actual cases of heart disease or heart failure.

H. J. Stewart and his associates in the Department of Medicine in Cornell University Medical College have published several researches into the action of digitalis; in the present instance it is interesting to consider their findings in heart disease of the so-called compensated and uncompensated types.¹ Previous work has shown that the action of digitalis on the normal heart is to decrease its size and its output of blood per unit time; the size of the enlarged heart is decreased but the output of blood is increased. The first series studied concerns patients who had undoubted signs of organic heart disease but who had not experienced heart failure. Standardized methods were adopted in the collection of the various data, which included the results of measurement of the cardiac output, the vital capacity, circulation times and blood pressure, and also radiological and electrocardiographic studies. Twenty-two patients were observed; five of these had auricular fibrillation, the remainder displayed a normal heart rhythm. Seven patients showed a decrease in cardiac output and in cardiac size, four an increase in output and a decrease in size of the heart and six no change in either. In other words, the heart sometimes behaved like a failing heart and other times like a normal heart. The authors could not predict in any given case which effect would be observed. It may be remarked here, however, that the "compensated" heart is surely an unsatisfactory term and it is doubtful whether any accurate assessment of the cardiac reserve was made or indeed could be made in the patients studied. It is interesting and indeed important to remember that the exact effect of

¹ Archives of Internal Medicine, October, 1938.

digitalis on hearts organically affected but not failing cannot be accurately predicted.

A similar study has also been carried out in 42 cases of "uncompensated cardiac disease", that is, cases in which the heart was failing either with regular rhythm or in association with auricular fibrillation. The conclusions from this work indicate that digitalis increases the output of blood per minute in the failing heart, decreasing its size and thereby increasing its work per beat more nearly to the amount that would be commensurate with the size of the organ. Therefore, the amount of the cardiac output, which would be decreased in the case of a normal heart, would rise in the case of a dilated heart. This decrease in cardiac size appears therefore to be a very important result from the use of digitalis, as is well seen in the familiar instance of the dramatic relief given by the drug in the acute failure of the rheumatic fibrillating heart. The authors state that "the effect of digitalis in the presence of auricular fibrillation is similar to that recorded when the rhythm is regular". Here apparently they refer only to the effect on the size and output of the heart. Their final conclusion is that as a generalization digitalis increases the work of the heart per beat, and that when the heart is failing it brings this degree of work more closely into consonance with what might be expected of the heart for its size. These communications do not alter our conception of the value of digitalis, though it may encourage us to employ it with more confidence in cases of failure with regular rhythm. Perhaps it chastens us as clinicians, nevertheless, for it indicates clearly that we cannot envisage the effect we can produce on a failing heart unless we also have some measure of its size and the degree of efficiency with which it is working. These can be expressed in mathematical terms even with bedside methods, but how often is such an expression attempted?

CANCER OF THE LUNG.

THE increasing frequency of cancer of the lung is a matter of general agreement, though the immensely improved diagnosis of pulmonary conditions must be taken into consideration, thanks to the work of radiologists, bronchoscopists and thoracic surgeons. Less than three years ago Cotter Harvey analysed 100 cases of lung cancer in this journal, and after stressing the importance of a close study of the history, symptoms and physical signs, made a plea for earlier diagnosis, and in particular the adoption as a routine of bronchoscopy and thoracotomy in doubtful cases. R. C. Brock, writing recently on pulmonary new growths, goes a step further.¹ He accepts contrast radiography and bronchoscopy as recognized diagnostic routines, though he makes special mention of the cases of pulmonary suppuration, empyema in particular, in which no suspicion of an underlying neoplasm has been entertained until the patient's

condition has shown obvious deterioration. But he emphasizes the fact that even if all these methods are used exact diagnosis may not be possible. Only histological study can complete the diagnostic record, and material can be obtained in two ways only, by bronchoscopy and by exploratory thoracotomy. He points out that the latter procedure carries little risk and scarcely any more discomfort than the more familiar laparotomy. Once diagnosis is established the question of treatment comes up, and Brock, like most writers on the subject, is unconvinced of the value of deep X ray therapy. The introduction of radon into the bronchial tree is more likely to produce results, and seems to afford a longer survival period and a greater degree of comfort to the patient in appropriate cases. The freeing of a blocked bronchus by this method, when it can be accomplished, is a great advantage, as it tends to prevent or relieve the massive septic infection of the lung which may occur below the lesion. Radical extirpation is rarely successful, but *aux grands maux les grands remèdes*, even perhaps to the extent of attempting total pneumonectomy. The study of lung cancer has led to a more thorough review of the blood and lymph vascular arrangements of the lung and the sites and frequency of metastases have been determined. This last consideration leads us to the pathologist, whose invaluable aid can be available only to the surgeon who can supply him with the tissues from the living lesion within the living body.

S. Koletsky has just published a clinical and pathological study of 100 cases of carcinoma of the lung, based upon the histological differentiation of the tumours.¹ Of the 100 lesions 35 were small cell carcinomata, 40 squamous cell carcinomata, 22 adenocarcinomata, and 3 others were classified as *carcinoma simplex*. The small cell variety is the highly malignant type sometimes called "oat-cell": it metastasizes early and extensively and consequently its prognosis is bad. The squamous cell carcinoma grows more slowly, invades more locally, and tends to cause local necrosis with cavitation. It is this type that may masquerade as a simple abscess or empyema, and it is most important that it should be recognized early not only on account of its tendency to give rise to septic destruction of the lung, but also because it tends to involve the hyparterial bronchus of the lower lobe and thus, with its naturally slower invasive tendencies, to be a type more favourable for surgical removal. The adenocarcinoma is less favourable, often metastasizing by the blood stream at an early stage. Koletsky records that the clinical diagnosis was correct in 56% of these cases. It will thus be clear that there are two duties to be performed in cases of suspicious pulmonary disease: to arrive at a tentative clinical diagnosis of pulmonary carcinoma as soon as possible, and having reasonably established this diagnosis, to endeavour to find out what type of growth it is. Exact methods are already established in the surgery of growths in

¹ The Lancet, November 12, 1938.

¹ Archives of Internal Medicine, October, 1938.

other parts of the body; they are needed also in the thorax. No doubt cancer of the lung is a very depressing disease, with so high a mortality that any physician or surgeon or radiotherapist might well be discouraged. But it should be remembered that the pioneers in the treatment of this grave condition are the surgeons who are willing to take responsibility in order that they may kindle a ray of hope in so dark a field. It is the duty of others to aid in the responsibility of early and accurate diagnosis.

THE PATHOLOGY OF VITAMIN C DEFICIENCY.

OUR knowledge of the various vitamins is constantly and rapidly undergoing change. New vitamins are being added and the role of all of them, in vital processes, is becoming more perfectly understood. *The Journal of the American Medical Association* deserves the thanks of the medical world for the publication of a new series of articles on the present state of our knowledge of the vitamins. These articles have been prepared under the auspices of the Council on Pharmacy and Chemistry and the Council on Foods. G. Dalldorf has dealt with the pathology of vitamin C deficiency.¹ Dalldorf remarks that the primary morphological effects of vitamin C deficiency occur in the intercellular substances of certain mesenchymal derivatives. Normally the type cell, the fibroblast, lies in an amorphous ground substance within which fibrils (reticulum) are formed. These may become gathered into wavy bands of collagen. In this transformation the fibrils appear to be cemented together by a translucent matrix, suggesting a colloid phenomenon, the setting of a gel. This is the phase of the formation of intercellular materials which may be controlled completely by vitamin C. The formation of intercellular material of bone (osteoid tissue) and of teeth (dentin) may be, in like manner, controlled by the withholding or the supplying of vitamin C. Observations on laboratory animals coincide with the phenomena of spontaneous human scurvy. It is not definitely settled, however, whether the vitamin directly affects the intercellular colloids or the cells. Dalldorf states that collagen may form in the absence of fibroblasts, but in the primary response to treatment in scurvy the newly formed material is observed close to the fibroblasts or their processes. When these manifestations are occurring the cells are not conspicuously changed in appearance, but they are altered during the late stages of chronic scurvy. Defective intercellular substances are noted in connective tissue, bones and teeth. It is considered also that they occur in the blood vessels. A curious modification of the process is seen in partial deficiency. This is a substitute material formed in the teeth instead of dentin, and termed osteodentin. In like manner in the bones in partial deficiency collagenous material is seen instead of

osteoid. There is a tendency for defective materials to form in connective tissue in partial depletion, and for nothing of a substantial nature to form in complete depletion. In total deficiency further involution of the tissues does not take place on account of the death of the animals. Morphological changes have not been observed in the capillaries. Capillaries derive their origin from embryonic connective tissue and, as Dalldorf remarks, it is not surprising that they are affected, but it is quite unknown where the weakness is manifested. In young granulation tissue during depletion capillary budding has been noted; but this effort at regeneration is soon aborted, possibly from want of intercellular materials.

Dalldorf observes that the anatomical manifestations of scurvy are greatly altered by the factors of growth and stress. The anatomical picture is so modified by growth that, in children and infants, scurvy was for 200 years considered as a variety of rickets. It certainly resembles the latter condition more closely than it does adult scorbutus. Hematomata become more and more infrequent with increase in the ages of the patients. Bone pains are uncommon in adults, but more frequent in young, growing animals. Osteoporosis is greatly intensified in young animals and is invariably most pronounced at the part of the bone where growth is most active. The most rapidly growing bones at the particular age at which scurvy occurs are most affected. Dalldorf points out that stress modifies the site of the lesions and determines the extent and involvement of the different structures. Individual lesions may be most readily comprehended if the lines of force are remembered. Stress plays a major part in determining the sites of the hemorrhages. The pressure of boots or of a diaper, the location of a vessel close to a bony prominence, are factors which determine whether or not a hemorrhage will occur. Lesions are indirectly modified by other factors, which are enumerated *in extenso* by Dalldorf. Such factors may determine the requirements of vitamin C. Incidentally Dalldorf wonders whether or not the vitamin enters directly into inflammatory phenomena. He considers that there is considerable evidence to support the view that the vitamin is necessary for the formation of blood cells. Dalldorf describes in detail the various skeletal lesions and those of the teeth and gingivæ as well as the muscles, eyes, skin and other tissues and organs. He enters into a consideration of the correlation of the lesions with the vitamin supply. He observes that it is of the greatest value to determine the various levels of vitamin C deficiency associated with the different morbid manifestations. It is known that the first morbid effect of a severe depletion is capillary fragility. It is probable also that the only morbid effect of a slight negative vitamin C balance is capillary fragility or the presence of petechiæ. In human scurvy, prior to these manifestations, there may be a brief prodromal period of weakness and lassitude lasting from five to eight days. In subclinical scurvy

¹ *The Journal of the American Medical Association*, October 5, 1938.

capillary fragility is present and chemical tests have revealed a subnormal vitamin C concentration in fasting blood samples. A condition of unsaturation is shown by measurement of the blood concentration and urinary excretion following a test dose of ascorbic acid. The earliest stages of unsaturation are generally associated with morbid capillary resistance. In subclinical scurvy vitamin C deficiency is seldom recognized radiologically and only with the greatest difficulty, if at all, anatomically. In moderately advanced scorbutus chemical tests reveal abnormal values and much vitamin C is necessary to saturate the patient. In these cases hemorrhages may be extensive. In severe scurvy nearly complete unsaturation may be demonstrated chemically. The initial doses of vitamin, even when large, are absorbed promptly from the blood stream and little is lost in the urine. Dalldorf very pertinently concludes that both clinical and anatomical identification of scurvy remains, as it always has been, a matter of alertness on the part of the physician.

NOISE.

THIS civilization of ours is a noisy affair. Trains clatter and roar through echoing underground caverns, trams clang and drone, start and stop on their way through city and suburbs, motor traffic roars and honks by day and by night. The din of machinery in many a factory is literally deafening—it is said, for instance, that only 9% of boilermakers have normal hearing. Even the ether, once silent as an untrodden snowfield, now coruscates and blares with static and crooning, with politics and swing-time. The news of battle and calamity crackles across the world like lightning, and strikes our ear-drums almost before the event. Once calamity could be localized and isolated, just as we isolate infectious disease. But no quarantine avails against wireless war-scares, fear and hatred; modern inventions see to it that apprehension, fear and distress are repeated, magnified and multiplied. It is a wonder that our ear-drums and our brains stand up to it as well as they do.

The auditory apparatus of the primates and of *Homo sapiens* was fashioned to detect the occasional disturbances of an otherwise primeval quietude. It was necessary for primitive man's very existence that he kept his ears wide open. This is not nearly so necessary in these days of policemen and burglary insurance, and most of us will agree with the late H. H. Woollard¹ that it is a major misfortune now that we cannot close our ears as we close our eyes. Woollard points out that the auditory system has never disentangled itself from the promotion of preservative reflexes endowed with strong feeling because of their great survival value. Unlike the pathway of vision, which proceeds without interruption to the lateral geniculate body, the auditory pathway is interrupted by a whole series of reflex

centres. Volleys of noise which would have startled the life out of the gentle savage have no meaning for the educated cortex of his modern descendants; but we cannot dissociate ourselves entirely from our biological history. These meaningless sounds which knock ceaselessly upon our ears, and which we try to ignore, arouse the lower levels of the nervous system and awaken primitive reflex activities. The emotion that accompanies them is costly in energy and temper. Primitive man indeed makes use of noise for the very purpose of arousing ungovernable emotion. He resorts to corroborees and war-dances as a means of producing mass excitement. Continued loud noise is like a drug: it makes thought impossible and releases primitive emotional forces. So, amongst savages, prolonged and raucous noise is the prelude to barbaric and superstitious ceremonies, to war and massacre, or to feast and orgy.

C. P. McCord, E. E. Teal and W. N. Witheridge¹ state that there is both practical and experimental evidence that noise has been responsible for impaired hearing, fatigue, neuroses, increased blood pressure and decreased working and mental efficiencies. They define noise as "sound which is generally considered unmusical, confused, discordant, irksome or disturbing", and observe, somewhat sadly, that the distinction between noise and music is not always easy. No, indeed, it is not. Differences of opinion in this regard have caused grand family quarrels, pitched battles between neighbours, and havoc in blocks of residential flats.

Intensity of sound may be measured in decibels. The smallest intensity of sound required to produce a sensation is said to be on the threshold of audibility. This point is zero on the decibel scale. According to McCord, Teal and Witheridge, experience indicates that a noise level of 90 decibels or higher is definitely harmful to the human ear. Exposure to prolonged noises of lower level is also harmful, but is less easily measured. If work must be done in the presence of a distracting noise, one's nervous system probably makes a continuous effort to adapt itself to that disturbance. Even though adaptation to noise is possible to the extent that one becomes unaware of it, nervous energy is expended in such a process and long exposure will bring on fatigue. Continuous exposure to irritating noises may lower one's threshold of feeling and produce hypersensitivity to noise.

So noise is arraigned as one of the arch-enemies of man's peace. What can be done about it? Woollard writes: "Reasonable and friendly men and women can only develop from children surrounded by calm and patience. The price extracted from us by noise is measured by a falling off in intellectual accomplishment and by a diminution in our patience and goodwill. . . . The abatement of meaningless sounds by personal and corporate effort is a duty of good citizenship"—and a matter of national urgency.

¹ St. Bartholomew's Hospital Journal, November, 1938.

¹ The Journal of the American Medical Association, May 7, 1938.

Abstracts from Current Medical Literature.

RADIOLOGY.

Bronchostenosis.

NILS WESTERMARK (*Acta Radiologica*, September and October, 1938) states that a bronchostenosis caused by inflammatory changes of the bronchi of non-tuberculous origin is a fairly common condition. It often starts in connexion with pneumonia or a severe bronchitis. Inflammatory changes then arise, cause oedema and infiltration, and produce, generally in their acute stage, complete occlusion. Obstructive atelectasis then occurs on the peripheral side of the stenosis. Should the occlusion fail to clear up, a valvular stenosis may arise with secondary emphysema. On renewed infection occlusion again arises with secondary obstructive atelectasis. Obstructive atelectasis, particularly when large areas of the lung are involved, leads to diminished pressure in the thoracic cavity. When there is much secretion in the bronchi there is an increased pressure in the bronchial lumen. The difference in pressure may be considerable, and will then tend to dilate the bronchial wall. This would seem a very frequent cause of bronchiectasis. Pneumonia may be classified from a radiological point of view into two different types: pneumonia with occlusion of the bigger bronchi and associated obstructive atelectasis of the lung tissue, and pneumonia without any occlusion of the bronchi, or with occlusion of but the finer branches, the pneumonic changes being entirely unconnected with any alveolar collapse. The author describes in detail the radiological appearances in obstructive pneumonia and in genuine pneumonia. Lung abscess is quite a common complication in obstructive pneumonia, while it occurs relatively seldom in connexion with genuine pneumonia. Pleural empyema, on the other hand, seems to be a more frequent complication in genuine pneumonia than in obstructive pneumonia. Bronchostenosis occurs quite frequently in tuberculosis, in the acute as well as in the chronic forms. The author discusses the formation of bronchostenosis in different forms of tuberculosis, and describes the radiological appearances in each instance.

The Radiological Diagnosis of Tuberculous Spondylitis.

NILS WESTERMARK and GÖSTA FORSMAN (*Acta Radiologica*, September, 1938) state that there are no vessels in the healthy intervertebral disks of an adult, and that, therefore, a primary infection cannot have a hamatogenous origin at this site. In children, when blood vessels are still present in the disk, it is possible for

a primary hamatogenous lesion to occur. The anterior lateral portion of the vertebral body has the most profuse blood supply, and an infection by means of an embolus will generally attack the anterior lateral section of the vertebral body. Two types of focal spondylitis occur. One form can be recognized relatively soon after the onset of symptoms. In this type the focus appears as a rounded or irregular area of rarefaction in the vertebral body, surrounded by a sclerotic border zone. If it is near the surface periosteal thickening occurs. This osteosclerosis and periostitis seem to decrease gradually and may completely disappear in the later stages of the disease. The other type appears later radiologically, often not until the intervertebral disk has been more or less destroyed. Such a focus is characterized by a rounded or irregular sequestrum, which contains more calcium than the adjacent bone. There thus arises a rarefied border zone around the sequestrum. It is possible to make a radiological diagnosis of focal tuberculous spondylitis in a relatively early stage before the destructive process has extended and has led to compression and gibbus formation. In view of the usual site of these lesions it is advisable to obtain oblique views of the spine in any suspected case.

Enlargement of the Ligamentum Flavum.

HOWARD A. BROWN (*Journal of Bone and Joint Surgery*, April, 1938) states that enlargement of the *Ligamentum flavum* is a clinical entity producing low back pain with sciatic radiation. Trauma of relatively slight degree is the aetiological factor in the majority of cases. Pathological changes in the involved ligaments are demonstrated microscopically. The clinical syndrome is difficult to differentiate from lumbosacral or sacro-iliac disorders, and lipiodol studies are required in order to enable a final diagnosis to be reached. It is seldom possible to differentiate the defects in the column of lipiodol from those produced by rupture of an intervertebral disk. Compression of nerve roots by the enlarged ligament produces the symptoms and signs. After their exit from the dura the nerve roots lie in the very narrow space between the *Ligamentum flavum* and the intervertebral disk. Even a slight enlargement of the ligament, a posterior protrusion of the intervertebral disk, or a combination of the two, will produce compression of the nerve roots.

Stippled Epiphyses with Congenital Hypothyroidism.

W. A. REILLY and F. S. SCOTT SMYTH (*American Journal of Roentgenology*, November, 1938) state that in some children having severe hypothyroidism resembling that of the true cretins, many of the epiphyses develop abnormally and have the following characteristics. There are

multiple areas of calcification, the calcification is slow, abnormal epiphyses occur in many parts of the skeleton, the distribution is usually bilateral, the process generally occurs in the capital epiphyses, and normal structure may never be found unless treatment is undertaken. When thyroid extract is used, normal epiphyses develop in from six to twelve months. This dysgenesis is often mistaken for the chondrodystrophy of Legg-Calvé-Perthes.

Diseases of the Apophyseal (Intervertebral) Articulations.

ALBERT OFFENHEIMER (*Journal of Bone and Joint Surgery*, April, 1938) states that for the recognition and comprehension of diseases of the apophyseal articulations it is necessary to consider them primarily and essentially as affections of true joints rather than as diseases of appendices of the vertebral bodies. That these joints are also parts of the spinal column is of secondary importance in this respect, for it has been the author's experience that the interrelations between the different types of spondylarthritis, and the various forms of spondylitis and spondylosis are much less definite and constant than has been believed. Röntgenologically the two main types of arthritis reappear in affections of the apophyseal joints: atrophic spondylarthritis, marked by swelling of the capsule, rarefaction of bones, and later by destruction of cartilages; and hypertrophic spondylarthritis, in which hypertrophic bone changes are consequent upon lesions of the cartilage. As in all other forms of arthritis, a combination of atrophic and hypertrophic changes may occur. Another form develops when, for reasons not yet known, the articular bone does not respond to the injury resulting from loss of cartilage. Secondary involvement of the joints in diseases of the adjacent bones may occur just as in other articulations; but affections of the vertebral bodies, both localized and systemic, involve the articulations only rarely. The compact bones of the pedicles seem less liable to infection and rarefaction than the spongy vertebral bodies, and the compensatory expansion of the intervertebral disks (if they are not affected by the disease), as well as the considerable resistance of the articular cartilages to mechanical stress, protects the articulations from injury. Hypertrophic spondylarthritis develops chiefly in those patients in whom the cartilages are especially vulnerable. As in other localizations, atrophic and hypertrophic arthritis in the apophyseal joints differ as a rule in the clinical course: atrophic spondylarthritis is marked by a more continuous chronicity, while hypertrophic spondylarthritis is usually associated with acute exacerbations. As in other joints, the inflammatory phase is marked by pain (spontaneous on pressure) and by impaired

mobility. Stiffness may be due to muscle tension; but rigidity independent of muscle spasms has been found to be invariably associated with narrowing of the apophyseal joint spaces indicative of thinning of the articular cartilage. This rigidity, unlike that caused by muscle tension, persists after the pain has subsided. Rigidity is not always caused by calcification of ligaments or by the diminution of the distance between vertebral bodies which results from thinning of the disks, or by fusion of marginal vertebral exostoses. The integrity of the articular cartilages is essential to the normal mobility of the spine, and thinning of the articular cartilages of one single apophyseal articulation may and does produce rod-like rigidity of a whole spinal section. It must, however, be emphasised that there neither is nor could possibly be a direct correlation between the degree and amount of the anatomical changes observed radiologically and the severity of the clinical symptoms.

PHYSICAL THERAPY.

Radiotherapeutic Treatment of Certain Granulomata.

R. McWHIRTER (*British Journal of Radiology*, October, 1938) describes the results of radiotherapeutic treatment in three groups of granulomata. The first group included actinomycosis in which the diagnosis had been made by the finding of ray-fungus in the discharge, the second included granuloma of the vulva and anus associated with venereal disease, and the third was a group in which a causal organism was not found. Fifteen patients with actinomycosis have been seen in the last three years. In eight cases the face and neck were involved, in four cases the abdomen, in two the chest wall, and in one the buttock. In many of the patients the condition was fairly well advanced, and when the abdomen was involved induration of the greater part of the abdominal wall was present, with numerous discharging sinuses. During the last eighteen months the patients have been treated with deep X ray therapy at 250 kilovolts, a Thoræus filter being used. Daily treatments of about 100 r have been given (the dose is varied according to the site, the size of the area and the age of the patient) over a prolonged period of time, and the dose applied to the lesion was as high as 4,000 r. Surgical treatment has rarely been necessary. Of the fifteen patients, all are alive; in twelve cases the sinuses have healed completely, and in the remaining three there is considerable improvement, but the lesions have not yet completely healed. Anal and vulvar granulomata are very radiosensitive and may disappear rapidly with a single dose of 300 r. Occasionally this requires to be

repeated after one week. There were seven granulomata of unknown origin, all primarily involving the mouth, pharynx or neck. Lesions resemble malignant disease, but histologically this is excluded, and no fungus has been found in any of the cases, although this type of infection is suspected. Lesions are often very radiosensitive; but although they respond to treatment, patients later may go down hill and die. Three of the patients are alive, two of them in poor general health, and one is fit and well. Treatment is similar to that of actinomycosis.

Radiotherapy for Tumours of the Testis.

E. T. LEDDY AND A. U. DESJARDINS (*Radiology*, September, 1938) state that during the years 1920 to 1936 inclusive, 314 patients with malignant tumour of the testis were treated at the Mayo Clinic. A well-known fact, but one frequently lost sight of, is that metastasis to the paraortic nodes occurs much earlier and more frequently than is generally recognized. It occurred 180 times in this series of cases. Under ordinary conditions metastasis takes place to the retroperitoneal nodes, to the supraclavicular nodes, and to the lungs and other organs in that order. Metastasis to the lungs is actually uncommon. The type of radiotherapy used was X ray therapy of medium voltage. The abdomen was usually treated through four anterior fields, from the xiphisternum to the pubis, and through four posterior fields. In addition, the left supraclavicular region and mediastinum were treated, even though X ray examination of the thorax revealed no metastasis. Each field was given about 550 r. The course of treatment was repeated in one month, even though metastasis could not be demonstrated. The commonest tumour of the testis, the seminoma, is very radiosensitive. Next in order of sensitiveness is the mixed or teratoid tumour. More resistant are the adult carcinomata and the true teratomata. Tables are given showing the three-year and five-year survivals according to the type of treatment and according to the presence or absence of metastasis. Of patients without metastasis, 61.7% survived for more than five years, while for those with metastasis the survival rate was 31.8%. This latter figure is perhaps the best indication of the value of radiotherapy, since all these patients had orchidectomy followed by irradiation.

The X Ray Treatment of Bacillus Welchii (Gas Gangrene) and Other Gas-Forming Infections.

J. F. KELLY, D. A. DOWELL, B. C. RUSSUM AND F. E. COLLIER (*Radiology*, November, 1938) report on 143 cases of gas gangrene infection treated with X rays. The list covers those cases dealt with by themselves and data col-

lected from various radiologists and surgeons throughout the United States of America and Canada. Of 123 patients suffering from ordinary gas gangrene, 113 are alive. Patients with arteriosclerotic and diabetic gangrene who developed gas gangrene infection are also included. The writers assert that the use of X rays in the treatment of gas gangrene is almost specific, because it is by far the most effective measure so far employed. There are no contraindications to its use by a qualified radiologist. The authors strenuously oppose amputation in these cases. If treatment is given early, that is, during the first twenty-four hours of the disease, there should be 100% recovery. Diagnosis can be made very early by X ray examination. X ray therapy is advised as a prophylactic measure in suspected cases. If treatment is started after twenty-four hours has elapsed, it is likely that 10% or 15% of these patients will die. X ray therapy has also been of benefit in the arteriosclerotic and diabetic cases. Treatment is given twice a day generally for three days (sometimes for five days). One hundred r are given per port in each treatment and low filtration is used. Up to the present no patient has died who has received a treatment in the morning and a treatment in the evening for three days over all the involved tissue.

Radiation Therapy of Chronic Mastitis.

H. C. TAYLOR, JUNIOR, AND R. I. BROWN (*American Journal of Roentgenology*, October, 1938) point out that surgery is contraindicated in the diffuse forms of chronic mastitis and that treatment with the oestrogenic hormone is often ineffective in this condition. Clinically, cases of chronic mastitis occur in two principal forms. The first form includes cases in which pain is the predominant symptom and in which diffuse nodularity develops, especially in the outer quadrants. In the second form are cases, characterized by secretion of some type from the nipple, in which some patients complain of moderate pain. Mixed forms are not uncommon. Circumscribed masses require surgical excision, and in mild cases of mastitis no active treatment is required. Radiation therapy may be given either directly to the breast, relatively large doses of high voltage rays being used, or to the ovaries to produce an artificial menopause and atrophy of the breasts. The latter method is reserved for patients over forty years of age or for those who are not likely to have further children. Twenty-two patients suffering from chronic mastitis treated by direct irradiation of the breast are reported; improvement was noted in about two-thirds of the cases. Eighteen patients treated by irradiation of the ovaries are reported, with improvement in seventeen instances.

British Medical Association News.

SCIENTIFIC.

A MEETING of the Victorian Branch of the British Medical Association was held in the Medical Society Hall, East Melbourne, on August 3, 1938, Dr. J. P. MAJOR, the President, in the chair.

The Diagnosis and Treatment of Intracranial Tumours.

Dr. L. B. COX read two papers. The first was entitled "Trauma and Intracranial Tumours" (see page 256); the second was entitled "Hemorrhage of the Brain Stem as a Significant Complication of Intracranial Tumours" (see page 259).

Dr. HUGH TRUMBLE dealt first with the question of the localization of tumours within the skull. He pointed out that for the surgeon accurate localization was imperative. Approximation in localization was not sufficient. It was a tragedy to open the skull and fail to find the tumour, more particularly when the tension within the skull was greatly raised and the brain was bulging strongly. There were many tumours that could not be accurately localized by ordinary clinical methods and plain radiography. In addition, there were many cases in which it was not certain even whether or not a tumour was present.

Encephalography was most valuable as an aid to diagnosis in those cases in which the pressure of the cerebro-spinal fluid, as measured by manometry, was not raised. It was dangerous, however, when the pressure was abnormally high. When the pressure of the cerebro-spinal fluid was raised above the normal, encephalography should not be resorted to, but ventriculography, properly performed, was without danger. It should not be undertaken except when all was ready to proceed at once to operation for the proper exposure and removal of any tumour that might be disclosed. Under local anaesthesia burr holes were made in the appropriate positions on the skull, needles were passed into the ventricles and the cerebro-spinal fluid was aspirated and replaced by oxygen. X ray photographs were then taken without the patient's being moved from the operating table. If a tumour was disclosed, immediate operation was then performed with the object of dealing with it.

Dr. Trumble gave in brief the clinical histories of many patients and showed numerous lantern slides to illustrate the findings obtained by ventriculography and the actual state of affairs as seen at operation. In many of these cases clinical evidence was not sufficient to prove even the presence of an intracranial tumour; and yet, by means of ventriculography, this was proven, and a direct attack upon the tumour was made possible. In other cases the clinical evidence was sufficient to demonstrate the presence of tumour, but not to localize it with sufficient accuracy to permit of a proper surgical attack upon it. Here, again, ventriculography was most successful in settling the diagnosis. In certain cases in which the intracranial pressure was very much raised because of the presence within the skull of a large tumour, there was great difficulty in introducing enough air into the ventricles, which were reduced to mere alits, to enable a satisfactory radiograph to be taken. In such cases a small amount of "Thorotrast", about one to two cubic centimetres, was introduced into one or both lateral ventricles instead of oxygen. Excellent pictures of the ventricles were then obtained, and in practically all cases these were sufficient to give accurate localisation of the tumour. After pictures had been obtained, the "Thorotrast" was aspirated again from the ventricles as completely as possible.

Dr. Trumble then turned to the question of the possibilities of surgery in the treatment of intracranial tumours. He said that the surgeon could approach and expose almost all parts of the brain, but often this entailed a certain amount of damage to that organ. Sometimes the brain could be retracted, as in operations upon the pituitary region or upon the region of the cerebello-pontine

angle. Sometimes it was necessary to incise the brain, as many tumours did not reach the surface at any point. At other times portion of the brain overlying a tumour was removed, a tunnel being cut through some less important part of the brain down to the surface of the tumour. He pointed out that there were certain parts of the brain, more particularly the brain-stem, in which nerve centres and tracts of great importance were so crowded together that any interference was certain to cause extensive crippling, if not the death of the patient. Tumours growing actually in such regions were not amenable to surgical interference.

Dr. Trumble then dealt with the question of treatment of certain of the more common types of intracranial tumours. There were many benign tumours that could be removed, either *in toto* or in part.

Discussing tumours in the region of the optic chiasm, Dr. Trumble said that adenomata of the pituitary gland formed about 17.8% of all intracranial tumours, according to Cushing. These tumours, if still of moderate size, could be removed in great part with benefit to the patient. The mortality of such operations was very low. In time the tumour would grow again, and a second operation might become necessary. When such tumours became very large and transgressed the bounds of the pituitary fossa, invading widely the base of the skull and pressing into the base of the brain, anything like complete surgical removal was extremely difficult and hazardous, if not impossible. Results in such cases were correspondingly bad. In addition to adenomata of the pituitary gland there occurred in this region other tumours of doubtful origin, which sometimes attained a large size and were highly malignant in character. The removal of these tumours was not feasible. Tumours arising in remnants of Rathke's pouch were sometimes removable, particularly when they took the form of simple cysts; but very frequently they were multi-cystic or solid in nature, growing up into the third ventricle, in which case complete removal was extremely hazardous.

Of nineteen patients with adenoma of the pituitary gland who had been subjected to operation, seventeen were still alive at the time of the meeting. Of the two patients who died, one was in an advanced state of acromegaly, with gross myocardial degeneration and advanced heart failure before operation. The other died of hyperthermia after operation. Three patients had had enormous tumours, which might have originated in the pituitary gland, but which had taken on malignant characters. The tumour in each case had spread widely over the base of the skull, eroding bone and pressing into the base of the brain. All three patients had died after operation, at which only a small portion of the tumour had been removed. Three patients with tumours or cysts originating in remnants of Rathke's pouch had been operated upon. In one case a large cyst had been removed, apparently completely, and the patient was alive and well three years after operation. In the other two cases the tumour was largely solid, and only partial removal was effected. One patient was alive and well; the other had died two months after operation of a recurrence of the tumour.

Dr. Trumble said that more rarely cholesteatomata and meningiomata occurred in this region. These tumours were eminently adapted to surgical removal, though such removal might be difficult. One cholesteatoma had been encountered in the pituitary fossa and the suprasellar region; it had been removed successfully. The patient was alive and well.

Dr. Trumble then referred to acoustic neurofibromata. He said that they formed about 3.7% of all intracranial tumours, according to Cushing. Complete removal of these tumours was very difficult; but subtotal intracapsular removal was sufficient to give lasting relief, though further intervention might become necessary at a later date. Unfortunately the facial nerve was almost invariably destroyed during the removal of such tumours, and as a rule nerve grafting was resorted to in order to relieve in some degree the facial disfigurement. Photographs of patients before and after nerve grafting were shown to illustrate the value of the reconstructive intervention. Of

eight patients with acoustic neurofibromata, upon whom twelve operations in all had been performed, one had died. The remainder were alive and well at the time of the meeting.

Dr. Trumble went on to say that other tumours, such as meningioma and cholesteatomata, were also found in the region of the cerebello-pontine angle. These also could be dealt with satisfactorily at operation. One patient with a very large cholesteatoma in the cerebello-pontine angular region had been operated upon, the tumour being removed in great part. The patient was alive and well.

In Cushing's opinion, meningioma comprised 13.4% of all intracranial tumours. They were benign tumours; but removal was frequently exceedingly difficult, because of their tendency to grow in relation to the large intracranial venous sinuses and because of their extreme vascularity. Every endeavour, however, should be made to remove them *in toto*, and such removal was nowadays effected in the great majority of cases. Twenty-one patients with meningioma had been subjected to operation; seven had died. Dr. Trumble considered that the mortality rate in this group was much too high; but of the last six patients treated all were alive and well.

Cushing considered that hemangioblastomata comprised about 2% of all intracranial tumours. They formed a very interesting group, and were found, as a rule, in the cerebellar fossa or in the spinal canal. Very rarely they occurred above the tentorium. Because of their benign nature every attempt was made to remove them at operation; but often they were exceedingly vascular and the difficulties of removal were on occasions very great. Six patients with hemangioblastomata of the cerebellum and one patient with a huge hemangioblastoma in the region of the *cauda equina* had been operated upon, the tumours being removed in all cases. All the patients were alive at the time of the meeting. A girl from whom a hemangioblastoma of the *cauda equina* had been removed was not, however, relieved of widespread paralysis.

Dr. Trumble then referred to gliomata. He said that they comprised 43.6% of all intracranial tumours, in Cushing's opinion. There were many types of gliomata, some of which were so highly malignant that surgical removal was scarcely worth while, so quickly did the tumour recur. Others were less malignant, and wide removal was sufficient to ensure more or less lasting relief to the patient. Still others were relatively benign. This was particularly true of the astrocytomata occurring in the cerebellum in children. These tumours very frequently gave rise to cyst formation, and were seen at operation as nodules in the wall of such a cyst and projecting into its cavity. Frequently it was possible to cut away such a nodule, and this was sufficient to prevent recurrence either of the tumour or of the cyst. Sometimes at operation a surgeon was confronted with a bulging brain, but was unable to demonstrate any tumour; and when the patient died, as frequently in such circumstances he would certainly die before long, it was almost equally difficult for the pathologist to demonstrate the tumour or its limits. In such cases there was a widespread infiltration of a lobe or even a whole hemisphere of the brain with tumour cells. No surgical removal was of any use.

Dr. S. V. SEWELL, in opening the discussion, reminded members that the occasion was at least the second one on which they had been thrilled by that pair of brilliant workers, Dr. Cox and Dr. Trumble. Melbourne had been indeed fortunate, because the work in neurology of Dr. Stawell and Dr. Maudsley had nearly forty years earlier started an interest in the subject. In 1903 Dr. Sewell had taken letters of introduction from Dr. Maudsley to Sir Victor Horsley, and had seen a great deal of his work at Queen's Square. He had a vivid recollection of the masterly work of the London School at that time and of the way in which the neurologists attempted to localize the tumours. The surgical dexterity of Horsley and his clinical acumen had provided a thrilling experience for Dr. Sewell as a young man coming from a centre where cerebral surgery simply did not exist. The first patient he had seen Horsley deal with was a young man who suffered from severe headache and Jacksonian sensory

epileptic attacks. The attacks had consisted of highly organized visual hallucinations, followed on rare occasions by a general convulsion. The only definite physical sign was a right homonymous hemianopia, with some diminution of general sensation on the right side, but no loss. Horsley had argued before operation that the highly organized visual hallucinations made it clear that the occipital cortex was intact, and suggested that the tumour was subcortical; he had even thought it possible that it might be an ependymal tumour in the posterior horn of the lateral ventricle. At operation no abnormality was seen on the surface of the occipital lobe, so Horsley had lifted the occipital pole out of its bed, incised along the course of the posterior horn from below and exposed a pedunculated tumour occupying a dilated posterior horn of the ventricle; he had removed the tumour and the patient had made a rapid recovery. Dr. Sewell remarked that he had not seen a better piece of diagnosis and no better piece of cerebral surgery. The London neurologists and surgeons had had many notable successes, but also a great many disappointments. He had returned to Melbourne in 1910, hoping to get good surgical work done; but he had had some unfortunate experiences. For years he had felt intensely disappointed with intracranial surgery and had had perforce to try out other methods of treatment, such as deep radiation therapy and such procedures as double decompression for the relief of headache. That was the position in Melbourne until Dr. Trumble had appeared on the scene some five or six years before the time of the meeting. His first recollection of Dr. Trumble's work in the field under discussion was the exposure in a masterly way of a cerebellar tumour. In the field of operation a large tumour had presented, occupying the whole right lateral lobe of the cerebellum. When that mass had been removed they had found the cerebellum showing as a crescent deep down, where it had been pushed by the pressure of the tumour mass. In spite of the difficulties, the tumour, a meningioma of the tentorium, had been removed almost entirely. Within an hour of the completion of the operation the patient swallowed a cup of tea, although she had been unable to swallow liquids for three months before the operation. There had been a recurrence eighteen months later; and, knowing that he was dealing with a meningioma growing from the *tentorium cerebelli*, Dr. Trumble had again operated and had cleared the area thoroughly. At the time of the meeting the patient was in good health and played golf, rode her horse, and led the life of a normal woman.

It was a special privilege to Dr. Sewell to see intracranial surgery being done in Melbourne as well as it was being done on the other side of the world. Dr. Cox and Dr. Trumble had been pioneers of the work, in spite of great difficulties and without seeing the other men at work. Speaking as one who had been keenly interested in the practice of neurology in Melbourne for almost thirty years, Dr. Sewell considered that the treatment had become quite satisfactory in the hands of Dr. Cox and Dr. Trumble at the Alfred Hospital, of Dr. E. Graeme Robertson and Dr. A. E. Coates at the Royal Melbourne Hospital, and of Dr. F. P. Morgan at Saint Vincent's Hospital.

Dr. Sewell recalled that Dr. F. M. R. Walsh, at Queen's Square, had analysed the case records of over two thousand patients with intracranial tumours. He had stated that he had found only one case in which he was convinced that trauma was the cause of the neoplasm. Dr. Sewell himself had seldom met with cases in which the sequence was indubitably established. One of the most convincing examples in his experience was that of a girl, who, in 1907, had fallen on the back of her head. From that time she had suffered from severe occipital pain, though her previous health had been quite satisfactory. In 1911 the late Dr. Thomas Boyd had exposed the cerebellum on the right side at the site of the old injury and had found that it was tense. After xanthochromic fluid had been withdrawn the cerebellar lobe had collapsed. In 1928 the patient had returned to Dr. Sewell with a recurrence of the old signs, which were typical of right-sided cerebellar

localisation. Dr. W. A. Hailes had found a tumour mass occupying the whole right lobe, which was removed. It was then apparent that the growth was an astrocytoma; the old cyst was visible, but the nodule in the wall had grown to a great size. He thought there was no doubt that the trauma had caused hæmorrhage into the cyst and that the symptoms had been relieved by removal of fluid from the cyst. The removal of the tumour by Dr. Hailes, however, had resulted in great and immediate improvement. That case illustrated one of the accepted roles of trauma in the course of intracranial tumours; the trauma had made the tumour manifest originally, but had not caused it. Another patient of Dr. Sewell had been loading sheep on a railway train and the door of the race had struck the man on the occipito-parietal region. The patient had become unconscious immediately and had been dazed for several days. He had gradually improved, though he continued to have headaches. Some six months later a meningioma was exposed surgically under the site of the blow, and round it were found some of the remains of the blood from the original injury. That case was the only one in his practice in which Dr. Sewell believed that the injury was responsible for the tumour. In that case the patient had received compensation, on the grounds that the injury had caused the disability.

Dr. Sewell then commented on the surprising amount of brain substance that could be removed surgically without causing the death of the patient. He referred, by way of illustration, to some of the circumstances in the story of a patient suffering from multiple cholesteatomata. That boy had had nine cerebral tumours removed from one side of the brain; Dr. Basil Kilvington had removed three of them at the one time. Some time later Dr. Coates had reopened the boy's skull and had found that practically no cortex was left on the affected side. The brain was represented by a thinned layer, not more than 0.3 centimetre (one-eighth of an inch) in thickness, forming the outer, partly calcified wall of a huge cavity. The boy was at the time of the meeting in apparent good health, though at one time he had had gross jargon aphasia and had seemed to be imbecile. With only one-half of his brain intact he had been educated and had become a commercial artist. His speech was good. His case was a remarkable example of compensation from the other side of the brain. In conclusion, Dr. Sewell said that the work that had been presented that night was of the greatest value. Dr. Cox's tissue cultures were going to be of great assistance in furthering knowledge of the etiology of tumours. He offered the speakers his hearty congratulations.

Dr. A. E. COATES said that those who had been privileged to listen to the addresses of Dr. Cox and Dr. Trumble had had a rare treat, and the time had flown. Dr. Cox had made a passing reference to the medico-legal aspect of trauma and tumour. That aspect had interested Dr. Coates. He had recently dealt with the case of a professional man who had died after rupturing his own teratoma, and an insurance company had paid compensation. The view had been taken that a tumour was part of the person and that even if the person was known to have it, if it was damaged by accident the sequelæ were compensatable. Dr. Coates pointed out that systematic presentations of experiences and results, such as had been given that night, were of the greatest possible value. Workers in the same or similar fields had to rely on such presentation to supplement dissemination of information at clinical meetings and informal conversation in order to crystallise opinions and make the advances of medical science of benefit to all. He had himself given considerable thought to the question of surgery of access to intracranial tumours, with a view to making cranial exploration safe and to getting the patient off the operating table in a satisfactory condition. He had reached the general conclusion that the old technique of access was not good, because of the likelihood of the patient's death as a result of hæmorrhage. At the Royal Melbourne Hospital he had come to rely on the use of clips of malleable metal for the scalp edges. Their use stopped the slow leakage of blood. If that leakage was not stopped, the blood pressure of the patient became progressively lower during a long

operation. With regard to matters other than technique, there was no essential difference between intracranial surgery and general surgery. In opening and closing the skull Dr. Coates considered that the surgeon should attempt to be expeditious; but the work inside the head should not be performed hastily. It required a delicacy of touch resembling that of a watchmaker. That form of surgery was depressing after a month of disappointment, in which spongioblastomata predominated; but the surgeon's philosophy became more cheerful after he had seen a few astrocytomata. Very few infiltrating tumours could be removed sufficiently completely to give favourable results; but Dr. Coates wished to emphasize the fact that operations for the relief of distressing symptoms were well worth performing. The patients could be made as comfortable as could those with infiltrating tumours of the abdomen requiring colostomy or cystostomy.

Dr. Coates then referred to irradiation of the head as a vexed question, which was still *sub judice*. An investigation on the subject was in progress in New York. Irradiation could be applied to the head, which was an accessible part of the body, with more success and more hope of good than could be expected elsewhere. The brain, however, had a tendency to become oedematous, and the patient might succumb because of that effect of the treatment. Meningiomata were very difficult for the surgeon, because they were such vascular structures. Irradiation should not be abandoned entirely. The proper place for its use would gradually become more defined.

Dr. Coates remarked that he had not used "Thorotrast" for ventriculography, but had relied on the introduction of air. He had found "Thorotrast" useful in temporal lobe tumours; when injected into the carotid artery it helped in the localization of the tumour and might also give some indication of its nature. It had to be remembered, when the use of "Thorotrast" was proposed, that it was radio-active, although in practice Dr. Coates did not regard that property as a contraindication in certain cases. He had been interested in the question of the development of oedema of the brain at or after operation. He was of the opinion that the intravenous administration of concentrated glucose and saline solutions did not reduce the blood pressure for longer than twenty minutes. He had not tried the effect of a large dosage of "Salyrgan".

Dr. Coates remarked that in the type of case under discussion it was frequently difficult to decide whether to operate or not. Even when a reasonably certain diagnosis had been made by a reliable neurologist and the diagnosis had been tested by accessory aids, the surgeon could seldom be quite sure that the tumour was present. He remembered one man who had been lying in bed suffering from a carbuncle, leading the life of a vegetable, because of vague, ill-defined cerebral deficiency. It was decided to operate in the hope that he would benefit. At the operation a large hematoma had been found and completely removed. The patient had made an excellent recovery from the illness, had become a foreman at a gas-works, and led a normal existence. At times, when all the signs of cerebellar tumour were present, at operation arachnoiditis or some other inflammatory lesion in the posterior fossa was found. The fibrosis was interfering purely mechanically with the circulation of cerebro-spinal fluid. That type of patient was often relieved of serious symptoms by operation. Dr. Coates concluded by saying that as a result of the development of intracranial surgery many a person was walking about who, without its aid, would have been in his grave; and when the cause was inflammatory the condition could be entirely relieved. He hoped that Dr. Cox and Dr. Trumble would report their results again later to the members of the Branch.

Dr. S. V. SEWELL said that Dr. Coates had reminded him that he had intended to remark on radiation therapy. In April, 1928, when in Tasmania, Dr. Sewell had had the opportunity of examining a woman who had been sent to consult him some six years earlier by Dr. Brettingham Moore. She had at that time been almost comatose, on account of a left-sided frontal lobe tumour. Dr. Kilvington had explored the skull and had found that the tumour

was a large one; he had not removed it. The patient had been given three successive courses of deep X ray therapy; and when Dr. Sewell saw her in April, 1938, she was perfectly well. Another patient had had a *medulloblastoma multiforme* of the left parietal lobule. The tumour had been removed almost entirely and the patient had subsequently had three courses of deep X ray therapy. After an interval of five years, during which the patient had reported to Dr. Sewell annually, there had been no recurrence of symptoms. Apart from one major fit that took place fifteen months before the time of the meeting, the patient had been in good health. Dr. Sewell said that he knew that that type of lesion was considered to be non-radioresistant; but that one had responded to irradiation.

Dr. Sewell had been reflecting on Dr. Cox's comment on the rarity of hemorrhages in subtentorial lesions. He had mounted a specimen, in 1907, which he thought was probably still in the pathological museum at the University of Melbourne. It might interest Dr. Cox. The specimen was a brain containing a cerebellar tumour. The patient had died about a month after an operation for decompression. About a dozen hemorrhagic lesions were present, extending into the mid-brain. They had not been dissected out and might have been due to thrombosis.

Dr. F. P. MORGAN said that he had little to add to the discussion. He had been impressed with the value of the information brought forward. He was grateful to Dr. Sewell and to Dr. Coates for their timely references to the necessity for an attempt to help the unhappy people with gliomata. Those patients were apt to be neglected, because of the hopeless outlook for them. It had to be remembered, however, that at the beginning of the present century all patients with tumours of the brain had been regarded as incurable and the operative mortality had been prohibitive. It was not wise to forget those who were still less happily placed than others; in another thirty years they too might be in a more fortunate position. The neurologists and surgeons must keep on dealing with them by measures that were recognized not to be satisfactory, in the expectation that with further knowledge better methods might be found. Irradiation techniques might be improved or the better method of treatment might be in some quite different line. In conclusion, Dr. Morgan said that he had been much impressed by Dr. Trumble's results and by the fair way in which they had been presented. He was also highly appreciative of Dr. Cox's mastery and scientific lecture, and thought that it was remarkable that they had been able to accomplish so much almost unaided.

MEDICO-POLITICAL.

A MEETING of the National Health Insurance Committee of the New South Wales Branch of the British Medical Association was held at the British Medical Association House, 135, Macquarie Street, Sydney, on Thursday, February 2, 1939, at 1.30 p.m.

The following members were present: Dr. R. C. Traill (Chairman), Dr. B. T. Edye, Dr. G. M. Barron, Dr. A. J. Collins, Dr. George Bell, Dr. W. F. Simmons, Dr. H. R. Grieve, Dr. J. R. Ryan, Dr. K. C. T. Rawle, Dr. C. R. Furner, Dr. C. H. Jaede, Dr. F. A. E. Lawes, Dr. T. J. B. Connelly, Dr. R. J. Jackson, Dr. J. G. Hunter (Medical Secretary).

Apology for non-attendance was received from Dr. R. O. Williams, Dr. H. Hunter Jamieson.

The Medical Secretary submitted a report of the meeting of the Federal National Health Insurance Committee which was held in Melbourne on November 25 to 27, 1938. At this meeting the following matters, *inter alia*, were discussed: the profession's case before the Royal Commission, organization of the profession throughout Australia, and the policy of the Association in regard to health insurance.

The Committee decided to place on record its appreciation of the valuable services rendered by Dr. H. R. R. Grieve.

The business of the meeting of the New South Wales Insurance Committee was concerned principally with the organization of the profession.

A MEETING of the Victorian Branch of the British Medical Association was held at the Medical Society Hall, Albert Street, East Melbourne, on February 1, 1939, Dr. F. L. DAVIES, the President, in the chair.

Financial Statements.

Dr. C. H. MOLLISON, Honorary Treasurer, presented the statements of receipts and expenditure of the Branch and of the Medical Society of Victoria for the year ended December 31, 1938.

Dr. Mollison said that the statements of receipts and expenditure of the Victorian Branch of the British Medical Association and the Medical Society of Victoria for the year under review (1938) disclosed that revenue exceeded expenditure by £140 14s. 3d. But the year unfortunately opened with debit balances in the two accounts aggregating £404 9s. 1d. The adverse balance required to clear the overdraft with the bank was therefore £263 14s. 10d.

Subscriptions, owing partly to increased membership, but mainly to an increase in rates, showed an increase of £306 6s. 1d. over the previous year. This increase fell short of what was budgeted for, the deficiency being accounted for by the number of unpaid subscriptions at the end of the year.

A comparison of the expenditure items of 1938 with 1937 was as follows:

	1938.			1937.		
	£	s.	d.	£	s.	d.
<i>The British Medical Journal</i> ..	1,764	9	9	1,757	3	1
Rebates to subdivisions ..	79	15	3	91	2	3
Federal Council, capitation fees	137	2	0	—	—	—
Salaries ..	1,897	8	3	2,124	18	0
Mr. Crouch—pension ..	300	0	0	300	0	0
Postages ..	161	4	9	155	10	6
Stationery ..	72	11	6	68	14	1
Printing ..	3	5	9	18	1	6
Sundry expenses ..	98	2	8	65	5	3
Audit fees ..	15	10	0	15	10	0
Bank charges ..	5	11	2	4	14	9
Collector's commission ..	4	6	1	6	6	3
Lanternist ..	2	10	0	3	0	0
Advertising ..	2	1	6	1	0	6
Travelling expenses ..	40	6	7	36	18	0
Repairs and alterations ..	626	19	6	13	2	9
THE MEDICAL JOURNAL OF AUSTRALIA ..	1,373	15	0	1,361	10	0
Library ..	221	12	8	222	18	10
Rates and taxes and insurance ..	31	2	5	30	19	5
Legal expenses ..	13	2	0	27	11	0
Telephone ..	50	2	1	52	14	11
Electric light and heating ..	45	12	3	38	3	9
Entertainment ..	16	2	6	18	11	0
Furniture and fittings ..	31	11	11	—	—	—
Debenture interest ..	158	0	0	302	10	0

There had been little or no fluctuation in what might be regarded as ordinary recurring expenditure. Still, there were items to which he would like to refer. The first was Federal Council capitation fees. The payment under this heading for 1938 was £137 2s. In 1937 the Branch, in view of the special grant received from London, was relieved of this payment. Heavy expenditure now being incurred by the Federal Council on account of national insurance had, however, made it necessary to resort to Branch *per capita* payments, and Dr. Mollison saw little hope of future relief. Probably an increased subsidy would be asked for, involving another slight increase in the subscription.

The amount spent on effecting alterations and repairs, it would be noted, was £266 19s. 6d. The alterations had been badly needed to effect efficiency and smooth running

of the office staff, and the repairs were necessary to preserve the Association's asset in the building. To meet the cost, debentures to an amount of £500 had been issued, and a generous donation by the British Medical Insurance Company of £106 14s. 6d. met the deficiency. On the library the Association had expended during the year £221 12s. 8d., and here again assistance to the extent of £97 5s. 11d. was forthcoming from the insurance company. Increase in sundry expenses item by £33 was accounted for by the activities of the Branch in connexion with national insurance. Many meetings had been held during the year to discuss this important matter, and these meetings had involved the Branch in expenses which, although really chargeable to the national insurance fund, had not all been so charged, mainly because exact dissection would have been difficult.

Debenture interest showed a reduction of £144 10s. on the amount met the previous year. Here too they had to thank the insurance company, who not only offered to accept interest at 1% on their holding, but suggested that the arrangement be retrospective to October, 1934.

The insurance company had also continued its grant of £480 towards the Medical Secretary's salary.

The amount contributed to the Medical Benevolent Fund (£166 19s. 3d.), Dr. Mollison regretted, fell short of the 1937 contribution (£182 1s.) by £15 1s. 9d. The aim of

this fund and the purposes to which it was being applied were so deserving that he had no diffidence in asking members to bear it in mind when paying their subscription cheque.

Everything considered, the financial position of the Branch was not unsatisfactory. It was well to bear in mind, however, that the activities of the Branch were expanding and that the expansion involved expenses. Watchfulness over expenditure must therefore not be relaxed, and avenues for increasing revenue should be explored and exploited. As in the past, these were matters which members of the Finance Subcommittee would keep constantly before them.

Dr. Mollison said that he would again impress upon members the valuable asset they had in the insurance company. Last year its contribution to the needs of the Branch had been nearly £800. What it would be well for members to remember was that the extent to which the activities of the Association could be promoted by financial assistance from the insurance company was determined absolutely by the patronage members extended to the company. The company was in a position to undertake to members' advantage any form of insurance, and any advantage that might accrue to the company as a result of members' support would ultimately be applied to the advancement of members' interests.

MEDICAL SOCIETY OF VICTORIA.

Statement of Receipts and Expenditure for Year ended December 31, 1938.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
To Subscriptions	2,824	18 1	By Balance at National Bank of Australasia Limited, January 1, 1938	195	5 9
" Hospital Benefits Association, Loan and Interest	1,040	0 0	" THE MEDICAL JOURNAL OF AUSTRALIA	1,373	15 0
" British Medical Insurance Company Grant	480	0 0	" Library—		
" Medical Agency Commission	59	14 0	Books and Journals	£221	12 8
" Instrument Sales—Commission	6	9 9	Less Purchases by British Medical Insurance Company	97	5 11
" Honour Boards	16	0 0		124	6 9
" Proceeds Debenture Issue	500	0 0	" British Medical Insurance Company—		
" Balance at National Bank of Australasia Limited, December 31, 1938, Dr.	141	8 6	Refund Loan and Interest, as <i>per contra</i>	1,040	0 0
			" Medical Secretary—Salary	900	0 0
			" Caretaker and Librarian—Salaries	191	6 3
			" C. S. Crouch—Pension	150	0 0
			" Travelling Expenses	0	16 11
			" Audit Fees	7	17 6
			" Postages	80	12 5
			" Sundry Expenses	21	7 4
			" Rates, Taxes and Insurance	31	2 5
			" Legal Expenses	13	2 0
			" Telephone	50	2 1
			" Electric Light and Heating	45	12 3
			" Repairs and Alterations	£622	9 6
			Less Donations by British Medical Insurance Company	106	14 6
				515	15 0
			" Entertainment	16	2 6
			" Bank Charges	1	18 9
			" Professor Wood Jones Portrait Fund	119	15 6
			" Furniture and Fittings	31	11 11
			" Debenture Interest	£257	10 0
			Less Refund by British Medical Insurance Company	99	10 0
				158	0 0
				£5,068	10 4
				£5,068	10 4

Compared with the Books and Accounts of the Medical Society of Victoria and found to be in accordance therewith.

EDGAR H. WARD, Financial Secretary.

J. V. M. WOOD & Co.,

C. H. MOLLISON, Honorary Treasurer.

Chartered Accountants (Aust.).

Melbourne, 25th day of January, 1939.

BRITISH MEDICAL ASSOCIATION (VICTORIAN BRANCH).

Statement of Receipts and Expenditure for Year ended December 31, 1938.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
To Cash in Hand, January 1, 1938	12	0 0	By Balance at National Bank of Australasia		
" Subscriptions	6,130	8 4	Limited January 1, 1938	209	3 4
" Rent of Hall	12	13 0	" Medical Society of Victoria	2,824	18 1
" Journal—Sales	3	7 0	" <i>The British Medical Journal</i>	1,764	9 9
" List of Members	0	7 10	" Medical Benevolent Fund	186	19 3
" Medical Benevolent Fund	166	19 3	" Rebates to Subdivisions	79	15 3
" Balance at National Bank of Australasia			" Federal Council—Capitation Fees	137	2 0
Limited, December 31, 1938, Dr.	122	6 4	" Salaries	806	2 0
			" C. S. Crouch—Pension	150	0 0
			" Postages	80	12 4
			" Stationery	72	11 6
			" Printing	3	5 9
			" Sundry Expenses	76	15 4
			" Audit Fees	7	17 6
			" Bank Charges	3	12 5
			" Collector's Commission	4	6 1
			" Lanternist	2	10 0
			" Advertising	2	1 6
			" Travelling Expenses	39	9 8
			" Repairs and Replacements	4	10 0
			" Cash in Hand, December 31, 1938	12	0 0
	26,448	1 9		26,448	1 9

Compared with the Books and Accounts of the British Medical Association (Victorian Branch) and found to be in accordance therewith.

EDGAR H. WARD, Financial Secretary.

J. V. M. WOOD & Co.,

C. H. MOLLISON, Honorary Treasurer.

Chartered Accountants (Aust.).

Melbourne, 25th day of January, 1939.

He had pleasure in submitting for adoption the statements of receipts and expenditure of the Victorian Branch of the British Medical Association and of the Medical Society of Victoria. The statements, which are published herewith, were adopted.

NOMINATIONS AND ELECTIONS.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

McDonald, James Main, M.B., B.S., 1938 (Univ. Sydney), The Prince Henry Hospital, Little Bay.

THE undermentioned have applied for election as members of the South Australian Branch of the British Medical Association:

Campbell, Allan Gordon, M.B., B.S., 1938 (Univ. Adelaide), 108 Finnis Street, North Adelaide.

Tamblyn, Eric Joseph, M.B., B.S., 1936 (Univ. Adelaide), Uraidla.

Hanp, Edward James Chipp, M.R.C.S., L.R.C.P. (London), 1929, 28, East Terrace, Kensington Gardens.

Irwin, William Morris, M.B., B.S., 1938 (Univ. Adelaide), Adelaide Hospital.

THE undermentioned has applied for election as a member of the Queensland Branch of the British Medical Association:

Elcoate, Robert Leslie Gough, M.B., 1908 (Univ. Melbourne), B.S., 1909 (Univ. Melbourne), Dirranbandi, Queensland.

THE undermentioned has been elected a member of the Queensland Branch of the British Medical Association:

Musgrave, Leslie Patrick, M.B., 1937 (Univ. Sydney), Marine Parade, Redcliffe.

Correspondence.

HOSPITAL EFFICIENCY.

SIR: A more determined effort by hospital officers and honoraries in the matter of a quicker turnover of patients is surely needed to improve hospital efficiency and cope with increasing waiting lists. Many beds could be made available more rapidly by transferring patients to convalescent homes or by discharging them to the care of district nurses.

The Hospitals Commission should first concern itself with providing inexpensive auxiliary convalescent homes and a hospital for patients with chronic orthopaedic conditions rather than build costly new blocks and new hospitals. It is galling to see a patient with a fractured limb immobilized in plaster occupying for months a bed intended for a patient suffering from an acute surgical condition.

Yours, etc.,

"F.R.C.S.",

January 25, 1939.

Sydney.

-CHAOUL THERAPY: A SPECIALIZED FORM OF X RAY TREATMENT.

SIR: I was much interested in Dr. Eric Frecker's article on contact therapy in your issue of December 24, as this form of therapy was pioneered by me in February, 1936, in the Queensland Cancer Trust Clinic at the Mater Misericordiae Hospital, South Brisbane. Having visited the clinic of Professor Henri Chaoul, at the Charité Hospital, Berlin, in 1935, and seen for myself some of his results, I was, as a surgeon, deeply impressed by the safety, speed and accuracy of treatment provided by this X ray apparatus, which had already been installed in the Birmingham General Hospital and in the Royal (Free)

Cancer Hospital, Kensington, by the generosity of Lord Austin. The latter, at my instigation, presented a complete outfit to the Queensland Cancer Trust towards the end of that year.

Latterly, Dr. G. W. Mason, who also operates a private Chaoul plant in Brisbane, has been associated with me in this form of treatment. Up to December 31 we have, in the clinic alone, treated a total of 498 cases, and cannot speak too highly of the capacity of the tube to deal with suitable lesions in a most gratifying manner. I agree entirely with Dr. Frecker in his note of warning that this apparatus should not be regarded as a cure-all in malignancy. It is an entirely wrong assumption to claim that Chaoul radiation can supplant deep therapy. The two are complementary.

With regard to the dosage, the largest we have given in one sitting is 800 r, and the largest total dose 32,000 r (in melanocarcinoma) spread over some weeks. In no case have we had any ultimate "burns" or other severe prolonged effects. We have come to the conclusion that we should administer to a growth a "knock-out" blow early in the treatment, and that the appropriate lymph drainage glands should be irradiated also at the same sittings. In this clinic we have had no personal experience of contact therapy of a focal skin distance less than three centimetres, but in view of Dr. Frecker's experience will probably try it out also.

During the past eighteen months we have been treating rectal cancer after exposing the neoplasm by removing the coccyx and part of the sacrum and slicing the posterior rectal wall open, to permit of direct attack by the Chaoul tube.

Yours, etc.,

L. M. McKillop.

Queensland Cancer Trust,
Brisbane,
January 31, 1939.

AN OCULIST'S PRESCRIPTION.

Sir: I have recently been supplied with information to the effect that, in December last, an oculist in Macquarie Street, on handing a prescription for spectacles to a patient, advised him to take it to a certain person to be made up, and volunteered the information that the craftsman in question was "the only one capable of carrying out the work".

It matters little that the information was imparted by the patient's father and the prescription was of a simple character. No one knows better than the oculist referred to that no individual craftsman or firm has a monopoly of ability to dispense any prescription for spectacles. It is regrettable, therefore, that a medical practitioner, for some motive best known to himself, will descend to the use of propaganda for the advantage of some, and collaterally to the disadvantage of others.

Yours, etc.,

WILFRED I. WENDORN.

2A, Castlereagh Street,
Sydney,
February 2, 1939.

TRIGEMINAL NEURALGIA.

Sir: It surely must have been a strange coincidence that just after reading Professor Hartel's recent article in the *Deutsche medizinische Wochenschrift* of June 3, 1938, on his "Twenty-Five Years' Experiences with the Treatment of Trigeminal Neuralgia", the extraordinary lament from your correspondent, Alec Lyons, should have appeared in your columns of January 21, 1939. During his opening remarks, which are very pertinent, Professor Hartel states:

The present-day point of view of the medical profession towards the treatment of trigeminal neuralgia is not by any means agreed upon; and many regard

not only the surgical, but more especially the injection treatment with great distrust. The result is that scarcely any other illness is allowed to drag on for so many years with every conceivable kind of treatment before the patient is finally referred to a specialist; and frequently the history is obtained that, after going endlessly from doctor to doctor, the patients are left to their fate, with the explanation that nothing can be done to help them.

The remainder of his article is an able exposition of the malady; and, after dispelling the above misconceptions, he shows how relief can be obtained by injection methods properly carried out. Many other able and experienced men, such as Harris, Jefferson, Frazier, Naffziger, Adson and Craig, *et alii*, have all in recent years published large series of hundreds of cases, relieved and cured by injection or surgical methods with a negligible mortality rate; and all the important neurosurgical clinics abroad have won the gratitude of countless sufferers for relief from their dreaded scourge.

In this country neurosurgery is yet in its infancy, but already is well enough established not to let the scathing remarks of your correspondent go unchallenged; and one of two conclusions only can be drawn from his letter: either he never had the classical *tic douloureux* of idiopathic origin, or else he has never received treatment on modern lines. Should the latter be the case, why not allow any neurosurgeon the opportunity to remedy the deficiency, rather than attempt to deprive many sufferers of their available benefits by a sweeping general condemnation of all therapy? Should relief not be obtained after adequate resection of the sensory root has been faithfully performed, then the diagnosis must be queried.

Yours, etc.,

R. A. MONEY.

Department of Neurosurgery,
Royal Prince Alfred Hospital,
February 6, 1939.

PROPOSED NATIONAL MEDICAL SERVICE.

Sir: It is probably not known to the great majority of British Medical Association members that at the present time there is being considered by the New South Wales Branch a scheme for a national medical service which will ultimately embrace the whole of Australia. The idea is that as national health insurance, with the conditions as they are, will not be acceptable to medical men, then it is up to the latter to put forth a scheme suitable for all concerned. A laudable idea, except for one or two things.

In the first place there are no grounds for thinking the public want any medical service. They are quite satisfied with things as they are. People in Australia prefer to be independent and pay for service as it is required. That is one reason why the lodges, which can offer cheap medical service, find it difficult to enrol new members. This in face of intense canvassing by the lodge officials. Everyone must be aware that the number of lodge patients is diminishing. Also no voluntary scheme would be successful. Take the Hospital Contribution Fund; this would collapse for want of support if it was not for business firms with large numbers of employees, who arrange that the latter contribute by deducting the sixpence a week from their pay envelopes. Yet under the British Medical Association scheme, with much higher contribution than the lodges ask, it is expected to enrol the great bulk of the public. Could anything be more fantastic? Certainly the sponsors of the proposal are making it a "complete" service, including operations and everything. This may appeal to a few £500-a-year citizens, who would remain in the scheme until their children's tonsils *et cetera* were cleaned up. Then they would drop out or join a lodge. It is distinctly stated that the service will not clash or interfere with the friendly societies. There is no need, even if space permitted, to go through all the clauses of the scheme. They

are hopelessly impracticable. If the authors of the proposal wish to try it out, well and good, except that we have to consider the cost of its attempted establishment.

Already, with meetings of delegates and printing, quite a good sum of money must have been expended. Later on, when the central committee for Australia meets (at £300 a time?) there will be still more expense. Then there will have to be organizers in each town. These men will have to be smarter than lodge secretaries or hospital secretaries if they hope to enrol a sufficient number of subscribers, so they will have to be adequately remunerated. Therefore I would suggest that no further expense be incurred with the proposed scheme unless the majority of the members express a wish for it and are prepared to pay for its establishment. There should be a levy made on those desiring it. If it is going to be such a good thing they will be glad to pay their £10 or more. But I object to the money I have contributed being wasted on a hopeless Utopian proposition.

Yours, etc.,

E. B. FITZPATRICK.

Tamworth,
New South Wales,
February 6, 1939.

[None of the moneys contributed by members for national health insurance purposes is being used towards paying expenses of the matter to which Dr. Fitzpatrick refers.—
EDITOR.]

NATIONAL HEALTH INSURANCE.

SIR: Time passes and still the profession, as represented by the British Medical Association, makes no pronouncement with regard to national health insurance. It has not been sufficiently stressed that the objection of the vast majority of doctors to this Act is based on the belief that it is not in the best interest of the workers of Australia, whom it purports to protect. Neither does it protect the interests or the standards of the medical profession. It is felt that it will almost certainly result in a deterioration in the quality of the medical services to the people.

What are we waiting for? We have been told over and over again that the Government will allow no alteration to the Act that will upset its "delicate actuarial balance". Both sides have said that they will not be bound by the decision of the Commission. We did not seek the appointment of a commission; that is a Government ruse. Why should we wait for its findings?

The Federal Council from the beginning has handled this matter very badly indeed. In spite of obvious loss of confidence on the part of a great many practitioners, members of the Federal Council, which originated the bungle, continue to act for us. It is an amazing thing that they did not resign forthwith.

The British Medical Association is the natural body to handle this matter. Members will undoubtedly follow a strong lead. We should make a bold and resolute pronouncement now that we do not approve the present Act, which is not in the best interest of the people, and we will have nothing to do with it. Must the members be forced to unite and demand the resignations of those members of the Federal Council who continue to mishandle the matter? The position is serious; something should be done and done quickly, or the British Medical Association in Australia will be split asunder. I again protest at the election of Federal delegates by Branch councils. This is wrong in principle, and in South Australia at least is bad in practice.

Yours, etc.,

D. R. W. COWAN.

172, North Terrace,
Adelaide,
February 6, 1939.

Obituary.

GEORGE THOMSON.

DR. GEORGE THOMSON, whose death was reported recently in Queensland, was born on October 17, 1893, in Buchie, Bannfshire, Scotland. His father was George Thomson, auctioneer, of Buchie. He went to the Buchie Higher Grade School and to Gordon's College, and Marischel College, Aberdeen; he represented his school at cricket and tennis and was dux of the school. He entered Marischel College, Aberdeen University, in 1911 and began his medical course, obtaining the degrees of Bachelor of Medicine and Bachelor of Surgery of Aberdeen. He was also a Fellow of the Royal Australasian College of Surgeons. He enlisted in the Royal London Fusiliers, holding the rank of captain in the Royal Army Medical Corps, and was wounded in France in 1917. After the War George Thomson came to Australia as ship's surgeon, returning to India to study eye work with Dr. Macpherson in Bombay, and later with Colonel Smith, of Amritsar. In 1920 he came to Australia again and commenced practice in Brisbane in partnership with Dr. Robert Thompson as an ophthalmic surgeon. This partnership lasted till 1935.

George Thomson was senior ophthalmic surgeon at the Brisbane General Hospital and also acted in an honorary capacity to the Returned Soldiers' Association and to the Salvation Army. He was intensely musical, and besides being an excellent pianist he possessed a beautifully trained tenor voice. He excelled at almost any sport, but especially at golf, at which he won many championships, both at the Brisbane Golf Club and at the Royal Queensland Golf Club. He was captain of the Royal Queensland Club, and was for many years a member of A pennant team. He was also President of the Brisbane Club, and entertained His Royal Highness the Duke of Gloucester at the club on his visit to Queensland. He leaves a widow, who was a voluntary worker in the hospital to which he was invalided during the War.

NIGEL SAMUEL GRIMSHAW.

We regret to announce the death of Dr. Nigel Samuel Grimshaw, which occurred on January 30, 1939, at Woodend, Victoria.

EDITH HELEN BARRETT.

We regret to announce the death of Dr. Edith Helen Barrett, which occurred on February 1, 1939, at Malvern, Victoria.

Proceedings of the Australian Medical Boards.

SOUTH AUSTRALIA.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Practitioners Act, 1919*, of South Australia, as duly qualified medical practitioners:

Funder, John Francis, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
Newland, Malcolm Creswell, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
Angove, Roger Clare, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
Irwin, William Morris, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.

Game, John Aylward, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
 Thompson, John Robert, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
 Ferris, Allan Aveling, M.B., B.S., 1936 (Univ. Melbourne), Gawler.
 Fenner, Frank John, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
 Shepherd, David Wickham, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
 Miller, Ian Lindemann, M.B., B.S., 1938 (Univ. Adelaide), Adelaide.
 Diamond, Bertram Hershall, M.B., B.S., 1935 (Univ. Sydney), Rose Park.

QUEENSLAND.

The undermentioned have been registered, pursuant to the provisions of *The Medical Acts, 1925 to 1935*, of Queensland, as duly qualified medical practitioners:

Baumatz, Szaja, M.D., 1926 (Siena), Goodna.
 Glover, Vonda Edna, M.B., B.S., 1938 (Univ. Melbourne), Brisbane.
 Macdonald, Ronald Rainy, M.B., B.S., 1938 (Univ. Melbourne), Brisbane.
 McPhee, Ian Gavin, M.B., B.S., 1938 (Univ. Melbourne), Brisbane.

A WARNING NOTICE.

MEMBERS of the Victorian Branch are advised to be cautious in their dealings with a man, aged about forty-five years, dark, thin, well dressed and well spoken. He has an epigastric scar and complains of pain resembling renal colic, for which morphine has been administered.

Diary for the Month.

FEB. 21.—New South Wales Branch, B.M.A.: Ethics Committee.
 FEB. 22.—Victorian Branch, B.M.A.: Council.
 FEB. 23.—South Australian Branch, B.M.A.: Branch.
 FEB. 24.—Queensland Branch, B.M.A.: Council.
 FEB. 28.—New South Wales Branch, B.M.A.: Medical Politics Committee.
 MAR. 1.—Western Australian Branch, B.M.A.: Council.
 MAR. 1.—Victorian Branch, B.M.A.: Branch.
 MAR. 2.—South Australian Branch, B.M.A.: Council.
 MAR. 7.—New South Wales Branch, B.M.A.: Organisation and Science Committee.
 MAR. 10.—Queensland Branch, B.M.A.: Council.
 MAR. 14.—Federal Council of B.M.A. in Australia (Melbourne).
 MAR. 14.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 MAR. 14.—New South Wales Branch, B.M.A.: Ethics Committee.
 MAR. 21.—New South Wales Branch, B.M.A.: Medical Politics Committee.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xiv to xvii

LEWISHAM HOSPITAL, LEWISHAM, NEW SOUTH WALES: Honorary Relieving Radiologist.
 NEW SOUTH WALES MASONIC HOSPITAL, ASHFIELD, NEW SOUTH WALES: Visiting Medical Staff.
 PUBLIC SERVICE OF SOUTH AUSTRALIA: Medical Officers.
 ROYAL HOSPITAL FOR WOMEN, PADDINGTON, NEW SOUTH WALES: Medical Superintendent, Resident Medical Officer.
 UNIVERSITY OF CAMBRIDGE, ENGLAND: Diploma in Medical Radiology and Electrolgy.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmmain United Friendly Societies' Dispensary. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. House, 235, Wickham Terrace, Brisbane, B.17.	Brisbane Associate Friendly Societies' Medical Institute. Proserpine District Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 178, North Terrace, Adelaide.	All Lodge appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.

Editorial Notices.

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